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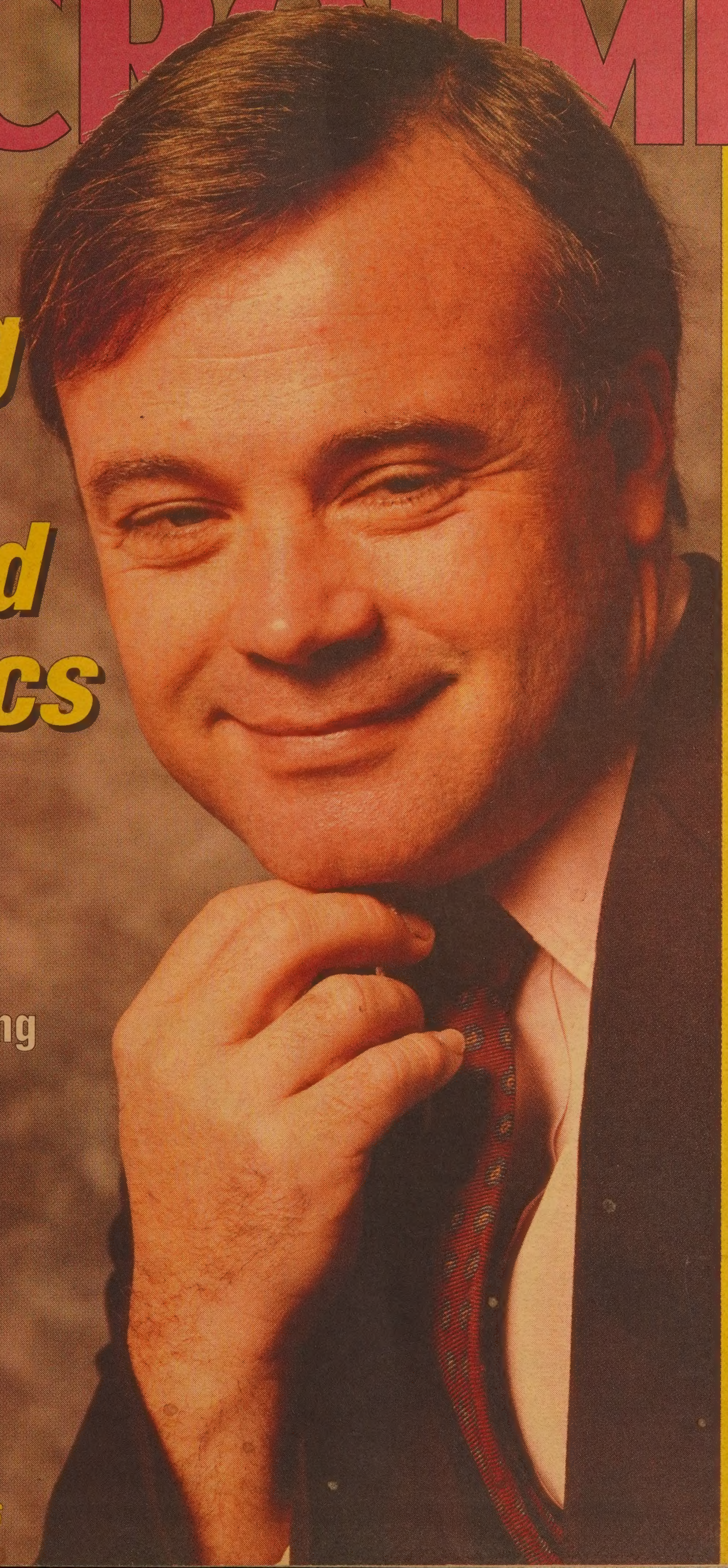
He's Betting On Harvard Graphics And OS/2...

Software Publishing Corporation's Fred Gibbons predicts his company's Intel-based business market will migrate from DOS to OS/2 in the '90s. *Story on page 56*



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STORY ON PAGE 34

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STORY ON PAGE 46

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STORY ON PAGE 130

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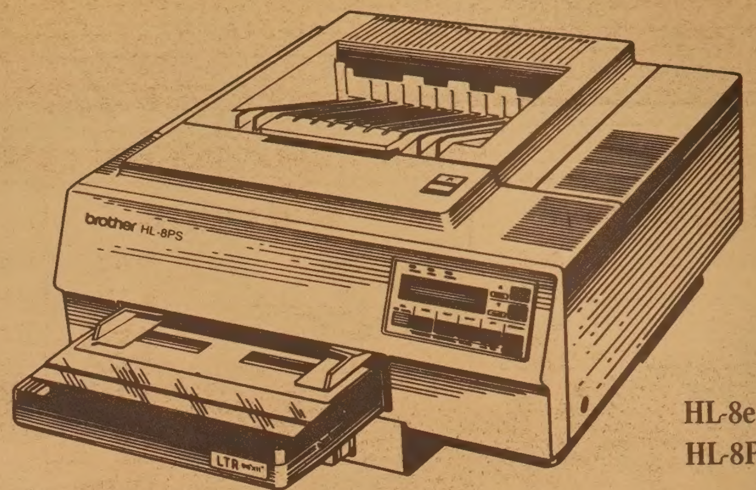

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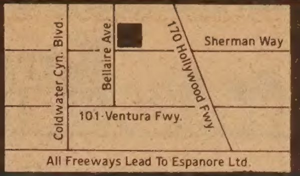

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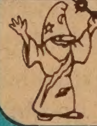

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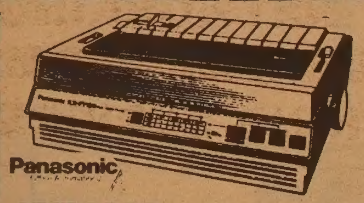

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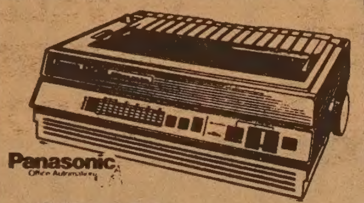

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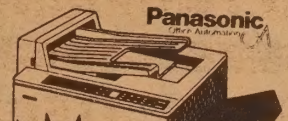

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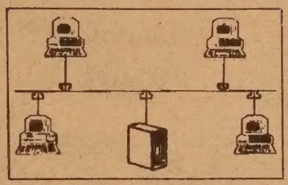

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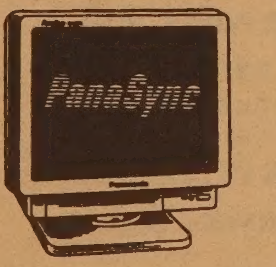

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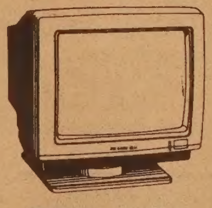

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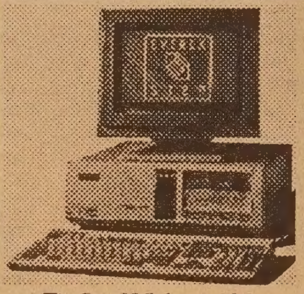

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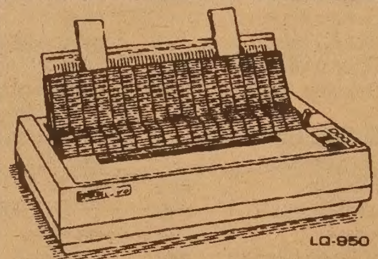

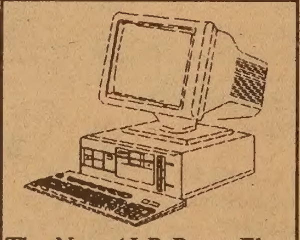

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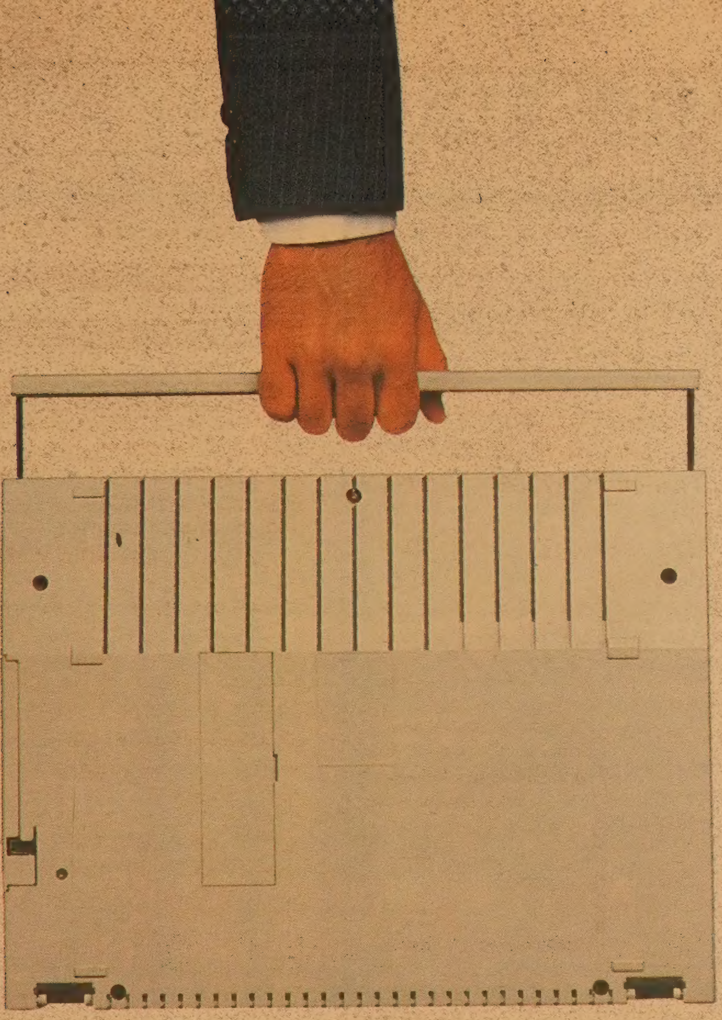

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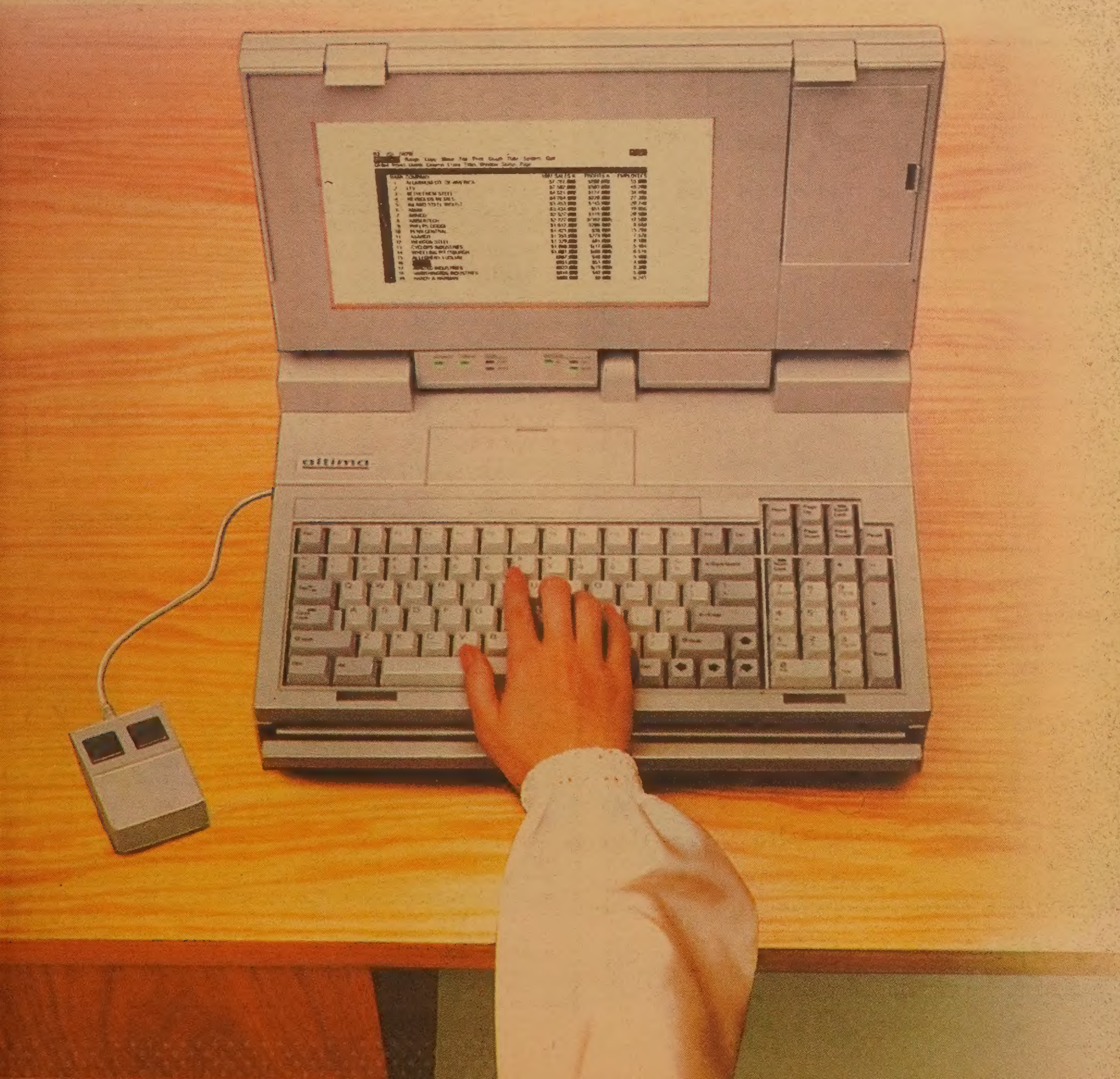
Altima One can run MS-DOS and OS/2 with ease. Plus it features an impressive 80286 microprocessor that speeds to a full 16 MHz, without ever gasping for breath.

What's more, Altima One *comes with* items that other manufacturers call options. Like a built-in 2400 baud modem. Or an optomechanical mouse with a compartment for storage. Or a PC compatible expansion slot.

Altima even remembered to give you more memory. Because with Altima One, you can expand from one megabyte to five.

Add to this the paper-white LCD backlit display; a full function 101-key detachable keyboard with numeric keypad; a 3½", 1.44 megabyte internal floppy disk drive; plus a 20 or 40 megabyte hard drive, and you'll realize why the Altima desktop/laptop is one heck of a computer. Or is it two?



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LETTERS

Historical Revision: Giving Credit Where It's Due

In Mary Eisenhart's article in the January 22 issue of *MicroTimes* she states: "The microprocessor was the brainchild of Intel engineer Ted Hoff, who was assigned the project of designing a set of 12 custom chips for Busicom..." Also that Hoff "developed a single-chip, general purpose logic device."

It was Federico Faggin, not Ted Hoff, who designed and developed the 4000. He accomplished this feat in nine months of relentlessly hard work. As Bob Noyce said in a *National Geographic* article (see "The Chip" in the October 1982 issue), "Now it's a team effort. In 1970 Federico Faggin designed the 4004 microprocessor chip by himself in nine months; our 32-bit microprocessor took 100 man-years!"

Ted Hoff did not participate either directly or indirectly in the design of the chip. He does deserve credit for having proposed a programmable solution to the Japanese calculator manufacturer for having worked out—with the customer—an architecture capable of solving Busicom's problem. This was not an innovation but a basic computer architecture that had been around for about 20 years.

The idea of integrating a computer on a chip, too, had been anticipated and proposed by many people before Hoff.

The critical task that had not been successfully accomplished before was the design of a microprocessor chip that worked, and was manufacturable. That job, requiring several design innovations, was done by Federico Faggin.

I should also point out that Faggin, while at Fairchild in 1968, had architected and developed the very technology that made the microprocessor possible: the Silicon Gate Technology that Intel copied from Fairchild.

Federico Faggin was the man in charge of all the microprocessor development at Intel from the start—in 1970—until the end of 1974, when he left Intel to found a rival microprocessor company, Zilog. His departure to found Zilog, whose Z80 became extremely successful, explains why it has not suited Intel to give him credit for his contributions there.

Elvia Faggin
Los Altos Hills

Intel responds: *We stand by our position that Ted Hoff is the inventor of the microprocessor. It was his idea, he promoted the concept, gained approval for the project with Intel, and managed the team responsible for the final outcome—a four-chip set which included the 4004 microprocessor. The team was made up of Ted, Federico Faggin, Stan Mazor and Masatoshi Shima (who originally represented Busicom, a Japanese calculator company, but later joined Intel). Each member of this team spent many long hours, and each contributed significant "breakthroughs" to develop the first microprocessor. However, Ted is the inventor.*

—Howard High,
Strategic Communications Manager, Intel Corporation

Another Side Of Perstor

I find that I must take exception to Woody Liswood's glowing article on the Perstor hard disk controller which appeared in the November 27, 1989 *MicroTimes* issue.

I am a professional computer consultant and a software developer with a product that is used by more than one thousand CPA firms throughout the country. My current microcomputer is a 24 MHz 386 system with zero wait states. The hard disk is a Micropolis 1335 71 megabyte disk with an MFM 1:1 controller. In other words, I am an expert user with a high performance system.

After reading Mr. Liswood's article, I shared his excitement and arranged to purchase a Perstor controller posthaste. My difficulties began there.

The first problem I encountered was that the first step after physically installing the controller card was to modify the setup information to indicate that a hard disk *was not* installed. Unfortunately, this requirement was not disclosed in the documentation. Therefore, a call to technical support was

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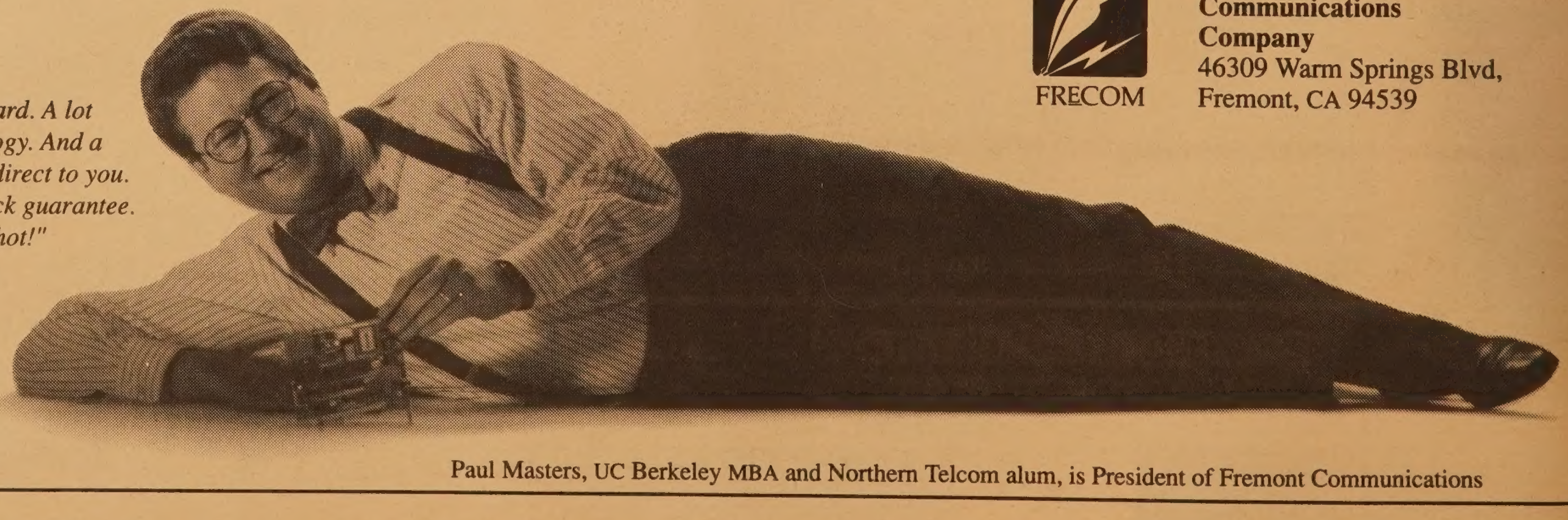

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LETTERS

required before I was able to perform a low level format of the hard disk.

When performing the low level format I had a vague uneasiness. It recommended 3:1 as the optimal interleave. I continued, however, and after performing the high level format I restored my data. Then came the most bitter blow of all.

I ran some performance testing of the Perstor controller. While the Perstor controller did increase my disk capacity to 130 Mb, the data transfer throughput (317Kb/sec) was but a mere 60% of what it had been with the MFM controller (522Kb/sec). I had lost 40% throughput!

Thus my second (paid) call to technical support came about. They indicated that indeed 3:1 interleaving was the best this relatively slow controller card could do. If 2:1 interleaving were optimal, then at least throughput would be relatively unchanged. Unfortunately, it was not to be.

The Perstor card was returned, the MFM card was reinstalled, low and high level formats again performed, and finally the data was reloaded.

The final solution was to obtain an RLL 1:1 card. Such a card is made by DTC and yields a 50% increase in capacity to 108 Mb with over a 40% increase in throughput to about 750 Kb/sec. I find this an eminently satisfactory solution.

It should be noted that the Perstor is an enhanced RLL variation. RLL encoding generally yields a 50% increase in capacity. Refreshing the low level format is a beneficial activity that should be performed at intervals. Neither of the cards will work with the program I use, Spinrite, that version 2 will operate with the Perstor but not the DTC cards.

I believe that *MicroTimes* readers may appreciate another user's experience with the Perstor.

Jeff Sampson
San Francisco

Even More Offended Amiga Users

One would think that after having your hands justly slapped by Amiga owners in the letter column of your November 27, 1989 issue that you would learn to exercise some self-restraint in echoing the conceited, smug self-promotion of the MS-DOS/Macintosh computing masses. I was surprised and rather displeased to discover that the contents of that selfsame issue not only ignored the sentiments of the Amiga and Atari ST users who wrote to you, but went further to offend them (and me).

In his article "The Top 10 Computer Games of 1989," Mike Markowitz states in the preamble to his rather iffy choices for top games that "The best 'game machines' are still the Amiga and the Atari ST, according to the experts, but only a lucky few players actually own one of these doomed systems." While Mr. Markowitz's previous offensive statement in his article on buying a first computer—that the Amiga "never really caught on"—was a bit irksome, though possibly defensible, Mr. Markowitz has flown off into the realm of the absurd and obscene.

Quite frankly, Amigas are at least as widely used for video production as for pure "game machines." There are also many graphic artists, musicians, animators, desktop publishers, and designers (CAD and otherwise) working on the Amiga who are among the "lucky few" following the system into its sunset of inevitable doom. Well over a million people have decided that the world of MS-DOS and Macintosh computing have failed to meet their needs, and have purchased Amigas instead. With a widespread television and advertising campaign and a considerable push into academic and vertical business and home-business markets currently underway, that number should be rapidly growing.

A case in point: in your "PC Power" section of your November 27, 1989 issue, you suggest various options for outfitting your HP LaserJet to interpret PostScript code; you fail to state that you could in fact attach an Amiga outfitted with PostScript interpreting software at less cost than either of your hardware options.

I cannot help but feel that the habitual neglect of this exciting and cost-effective system is poor editorial policy. And in response to Mr. Markowitz, he has pointed out something that is doomed, though it is neither the Amiga nor the Atari ST. Either his arrogance or your credibility is doomed. Moreover, the continuation of Mr. Markowitz's repugnant, arrogant commentary in your paper will surely ensure that it is the latter which falls.

David Rohrl
San Francisco

For the record, we would welcome an informative article on the use of Amigas with Hewlett-Packard printers, laser and otherwise. To say nothing of the use of the Amiga in multi-vendor networked business environments. Interested writers are heartily encouraged to contact us.—eds.

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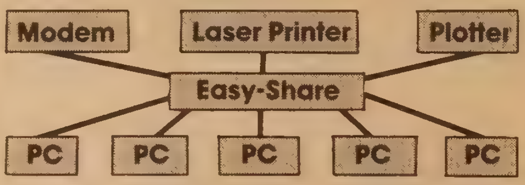

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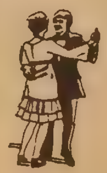

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March 5-8 Seybold Seminars Ninety. Boston. Seybold Seminars. Call: (213)457-5850.

March 5-9 Conference On Artificial Intelligence Applications. Santa Barbara. IEEE Computer Society. Call: Se June Hong, (914)945-2265.

March 6-9 Real-Time Programming: A Hands-On C Workshop. Los Angeles. Integrated Computer Systems. Call: 1-800-421-8166.

March 11 East–West Computer Show & Sale. San Diego. East-West Computer Shows. Call: (415)388-8893.

March 13–16 C Programming Hands-On Workshop. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

March 13–16 Microprocessor Troubleshooting Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

March 13–16 Software Requirements And Design Specifications Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

March 13–16 Software Quality Assurance And Testing Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

March 17 Computer Marketplace Show. Pomona. Computer Marketplace. Call: Bob Kushner, (408)778-5200.

March 17 East-West Computer Show. Ventura. East-West Computer Shows. Call: (415)388-8893.

March 17 Software Marketing Magic: The Secrets Revealed Seminar. San Mateo. Software Entrepreneurs' Forum. Call: Eric Gould, (415)968-8888.

March 18 East–West Computer Show & Sale. Ventura. East-West Computer Shows. Call: (415)388-8893.

March 21 ZIM Entity-Relationship Seminar. Los Angeles. Sterling Software. Call: (613)727-1397.

March 21–24 Technology And Persons With Disabilities Conference. Northridge. California State University, Northridge. Call: Henry Murphy, (818)885-2869.

March 24 East–West Computer Show & Sale. Pasadena. East-West Computer Shows. Call: (415)388-8893.

March 25-28 1990 SPA Spring Symposium. San Diego. Software Publishers Association. Call: (202)452-1600.

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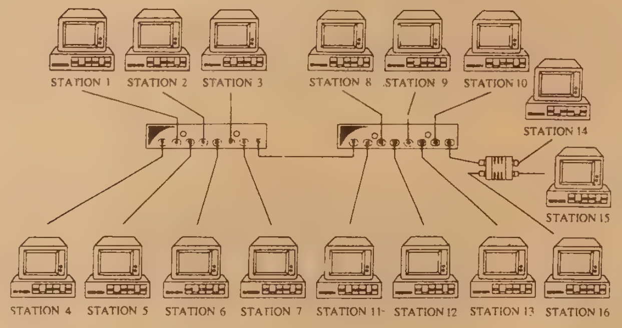

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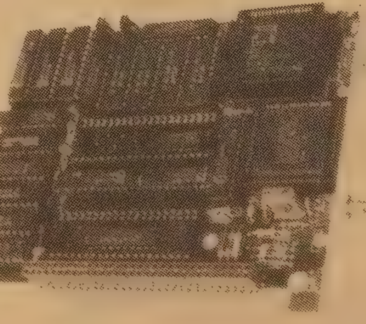

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April 1-2 Computer Game Developers' Conference. San Jose. Call: (408)942-0387.

April 2–4 Discover UNIX 1990 Conference. Boston. The Wang Institute of Boston University. Call: (508)649-9731.

April 2–6 Magazine Publishing Week/West Conference. Los Angeles. MPA, FOLIO & WPA. Call: (203)358-9900.

April 3–6 Distributed Databases: Design, Implementation & Management Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

April 3–6 Hands-On Datacomm Troubleshooting Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

April 3–6 UNIX Hands-On Workshop Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

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April 4–6 Fourth Annual Parallel Processing Symposium. Fullerton. IEEE Computer Society. Call: (714)738-3414.

April 4-6 Fourth Annual Parallel Processing Symposium. Fullerton. IEEE Computer Society. Call: Dr. Larry H. Canter, (714)738-3414.

April 7 Computer Marketplace Show. Pomona. Computer Marketplace. Call: Bob Krushner, (408)778-5200.

April 8 East–West Computer Show & Sale. Oxnard. East-West Computer Shows. Call: (415)388-8893.

April 10–13 Hands-On Datacomm And Networks Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

April 10-12 AEA/AOC Aerospace And Defense Trade Exhibition. Santa Clara. American Electronics Association. Call: Chuck Jungi, (408)987-4204.

April 10-13 Hands-On Datacomm And Networks Seminar. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

April 11–13 Computer Show For "Businesspeople." Anaheim. SofTrend '90. Call: Melissa Verdugo, (213)831-6000.

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April 24–27 Software Requirements And Design Specifications Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

April 25-27 Software Maintenance Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

April 28 Computer Marketplace Show. Pomona. Computer Marketplace. Call: Bob Krushner, (408)778-5200.

April 29-May 2 International Paradox Users Conference. Monterey. Borland International. Call: (408)439-1622.

April 30-May 2 SETA: Symposium On Environments And Tools For Ada. Redondo Beach. IEEE Computer Society. Call: Teri Payton, (703)620-7770.

May 1 ZIM Entity-Relationship Seminar. Los Angeles. Sterling Software. Call: (613)727-1397.

May 7–9 The Three Rs Of Software Automation: Re-Engineering, Repositories, Reusability Conference. San Francisco. Extended Intelligence, Inc. Call: (312)642-9080.

May 7–9 UNIX Expo West Show. Los Angeles. National Expositions Company. Call: Heidi Dethloff, (312)332-4650.

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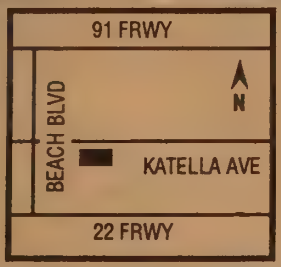

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CALENDAR OF EVENTS *continued*

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May 8-10 Federal Computer Conference And Defense & Government Computer Graphics Conference. Anaheim. Young & Associates, Inc. Call: 1-800-343-6944.

May 8–11 Network Cabling and Wiring Techniques Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 8–11 Software Quality Assurance And Testing Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 8–11 SQL: A Hands-On Workshop Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 8–11 UNIX Hands-On Workshop Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 12 Computer Marketplace Show. Costa Mesa. RK Productions. Call: (408)778-5200.

May 12 Computer Marketplace Show. Orange County. Computer Marketplace. Call: Bob Krushner, (408)778-5200.

May 15–18 C Programming Hands-On Workshop. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 15–18 Computer Network Architectures & Protocols Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 15–18 Effective Personal Management Skills Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 15–18 Finance For Non-Financial Group, Department and Project Managers Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 15–18 PC Networking: Hands-On Workshop Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 19 Computer Marketplace Show. Pomona. Computer Marketplace. Call: Bob Krushner, (408)778-5200.

May 22–25 Software Requirements And Design Specifications Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

As a community service, MicroTimes *lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month, two months before the coverdate of the issue in which you'd like it to appear (i.e., the deadline for the March issue, distributed during February, is January 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.*

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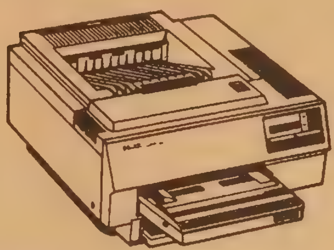

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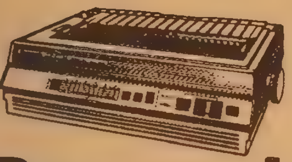

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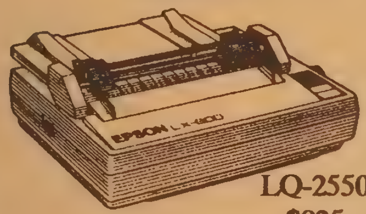

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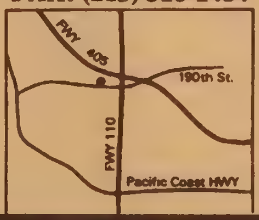

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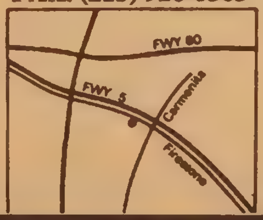

NEWS
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BY PAUL HOFFMAN

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Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman@well) and MCI Mail (264-3171). He also writes popular microcomputer books.

Adobe Secures Font Patent; SPA Fights Piracy; IBM Announces RISC Workstation To Mixed Reviews

Adobe Receives Patent For Computer Font

In an interesting end-run around the U.S. Copyright Office, Adobe received the first copyright registration for a computer typeface by copyrighting it as a program. The Copyright Office had steadfastly refused to grant copyrights to computer-generated fonts or typefaces, on the grounds that they were not copyrightable since the design of the font was a collection of data. Adobe was able to show that since PostScript and other outline-only fonts were programs that had to be run in order for the font to be displayed or printed, it could be protected as a program.

Adobe was helped by its competitors such as Bitstream, who worried that they would not be able to protect the works that they sold.

The difference between the font and its underlying program is subtle but important. Screen-only fonts will still be unregisterable, according to the Copyright Office, unless they are generated on the screen by a discernible program. Most fonts for most computers are simply maps of the pixels that should be turned off or on, and are therefore not program-based. Any font that requires a program to form the font, not to simply display it, would probably be copyrightable.

The successful registration was for the single font (ITC Garamond), but it's likely that Adobe and others will immediately apply for all the fonts that they have created to date. Of course, the registration applications will not be for the fonts themselves but for the underlying programs.

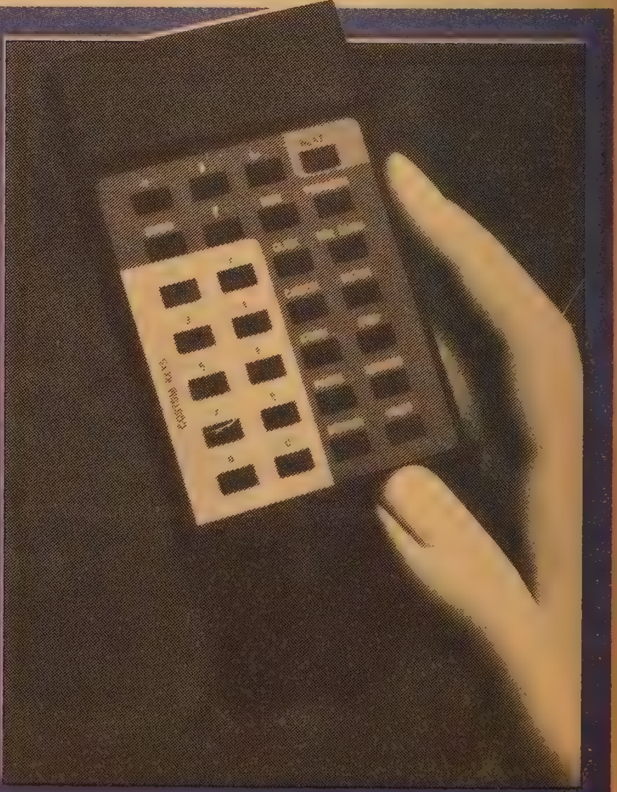
One lawyer predicted that the copyright notice on fonts in the future will change significantly. Apple expressed satisfaction with the registration, since the same principle used in Adobe's case would certainly be used in the fonts that Apple is releasing this year in the so-called "Royal" format. "Royal" fonts will also be used by Microsoft and IBM in future versions of OS/2.

Ron Friedman, president of Bitstream, com-

Press Release Of The Month

Computer Support Corporation sent out a wonderful announcement for their new "On-Command" remote control hardware for the Macintosh. The $295 device is meant to allow people giving Macintosh-based presentations to avoid having to stand near the Mac.

As you can see from the picture, however, people aren't the only things that can use the device. In what might be a comment on how boring many computer-aided presentations can be, CSC shows how even a mannequin (or a human with a plastic hand) can use their device.



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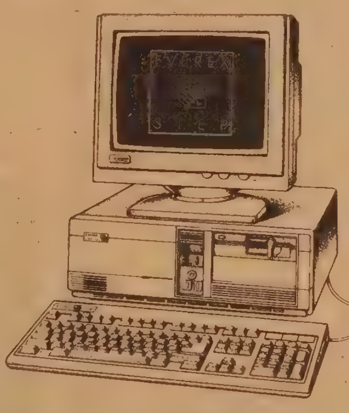

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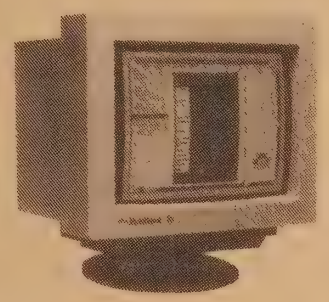

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Motorola Releases 68040, Gives 80486 Serious Competition

Stealing some of Intel's thunder, Motorola announced the 68040 CPU to help bolster its position in the UNIX workstation market. The 040 is the logical successor to the 68030; many manufacturers, including Apple, NeXT, and Hewlett-Packard, will probably release machines based on the chip late this year or early next year.

If Motorola's announced test speeds are accurate, the 040 will run significantly faster than the Intel 80486 for most common applications.This should give a big boost to companies that have stuck with Motorola even as the Intel line looked like it was going to take over at the high end of the market.

> **If Motorola's announced test speeds are accurate, the 040 will run significantly faster than the Intel 80486 for most common applications.**

The 040 has its own math processing capabilities on-chip, eliminating the need for a math coprocessor. In fact, the math in the 040 is ten times faster than the math in Motorola's own 68882 coprocessor for most calculations. This, combined with its large speed advantage over the 80486, should keep Motorola solidly in the lead for high-end UNIX workstations.

At the announcement, Motorola stressed that the 040 is completely compatible with earlier chips, so that applications software will run unmodified on the system. Motorola added many enhancements that will allow operating system writers greater flexibility in fine-tuning performance for different environments, but the normal "user" mode remains identical to earlier chips.

This ability to change the operating system level of the 040 ensures that those programs will run even faster than expected, since the programmers can pick and choose which of the new features to implement. Apple says that the Macintosh operating

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NEWS
AND ANALYSIS

system will be able to take full advantage of the new features and that it expects to release an 040-based Mac as soon as there is a good supply of chips.

Motorola will also be giving other CPU manufacturers a run by pricing the 040 fairly low relative to other CPUs. For example, the announced $800 price tag on the 040 is lower than the $950 for the 80486 or approximately $1700 for SPARC chips from various manufacturers. This should help lower the price of systems that use the 040.

Worried About Piracy At Your Company? A "Software Self-Audit" Might Help

Everyone knows that copying software for use on more than one system is against the law. To help drive that point home in the past few years, the Software Publishers Association has begun singling out companies where piracy is rampant and bringing lawsuits against them. (I apologize to those of you who thought that you would get through a whole month of the news without having to think about lawyers.)

Now, the SPA is helping prevent such embarrassing moments by sending out a software self-audit kit to anyone who wants one. The idea behind the self-audit is to help companies recognize that they have a piracy problem and deal with it internally. The SPA hopes that this tactic helps get companies to voluntarily comply with both the spirit and letter of the law.

If you are concerned about piracy at your company, write for your free self-audit packet to: Software Publishers Association, 1101 Connecticut Avenue NW, Suite 901, Washington, DC 20036; 202/452-1600.

Missing The Point: The Press And IBM's New Workstations

If you listen to the computer press, you would think that IBM's new System 6000 line of workstations was an important new product. For almost a month before the announcement, magazines talked about how this would be IBM's first "real" attempt to win the workstation market and that the systems would be attractive to engineers and other "power users."

Unfortunately, this is an example of the press again falling for IBM's marketing of what will most likely be another red herring in the IBM product line. The new line of RISC-based systems is just

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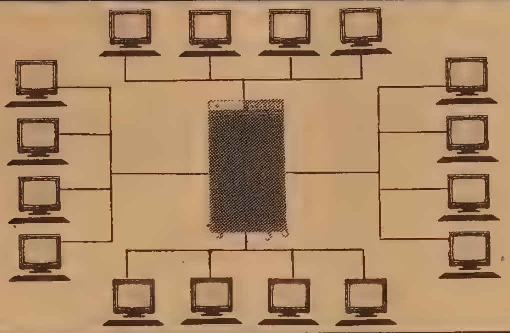

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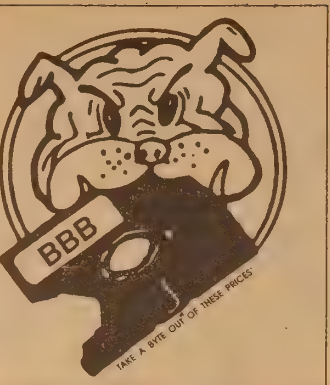
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another workstation. That is not to say that they are not powerful or impressive; however, they are also late, expensive, and lack a stable base of software to help sell them.

Anyone who thinks that whatever IBM makes can take over a market should look at the latest projections of the percentage of the PC market IBM owns. Simply entering the market does not assure IBM of anything.

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Worse yet, much of the press has forgotten that this is not IBM's first foray into the workstation field. The IBM RT was an unmitigated disaster for both IBM and anyone who bought it. There is almost no application software for the RT; IBM never did much with the operating system, and almost no one came out with usable peripherals for the system. Even though these points were missed by the computer press, they are well remembered by anyone who wanted a workstation and decided to buy from IBM based on the specs and on IBM's name.

To its credit, IBM made some very good choices in the design of the system. Probably the system's most notable feature is that it uses the MCA bus so that the system works with any MCA-based peripherals and memory cards. The higher-end models sport fast color graphics and will be able to communicate with many common graphics standards.

The specs for the System/6000 make it clear that IBM is aiming it at the federal market, the most lucrative market for UNIX workstations. The new systems meet most of the common current requirements for UNIX systems, such as error-correcting memory.

Most military contracts are worded so that only a single supplier could possibly win; IBM added enough technology to these systems that someone could conceivably write a reasonable-looking specification that could only be met by the System/6000. A typical example of this might be a contract that requires both RISC and a fast industry-standard bus.

Two major issues are left unresolved, however:

- Since the various models cost almost twice as much as competitive models from manufacturers such as Sun, Hewlett-Packard, and DEC, who will want to be the pioneers with these systems? Although IBM seeded many software companies with

continued on page 118

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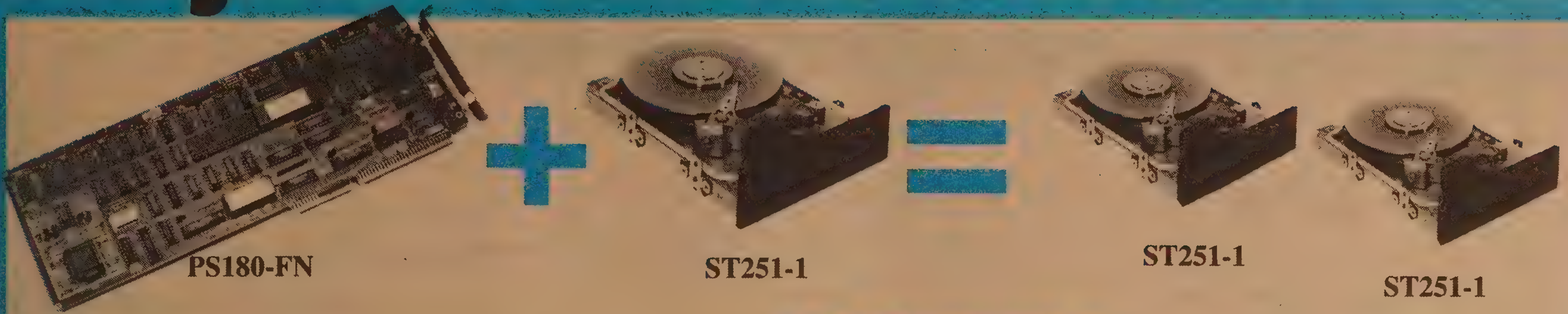

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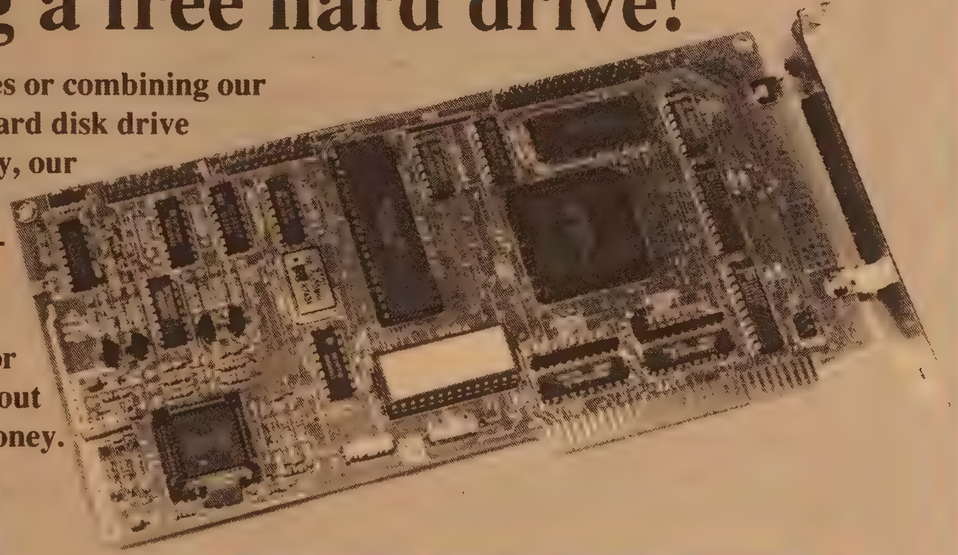

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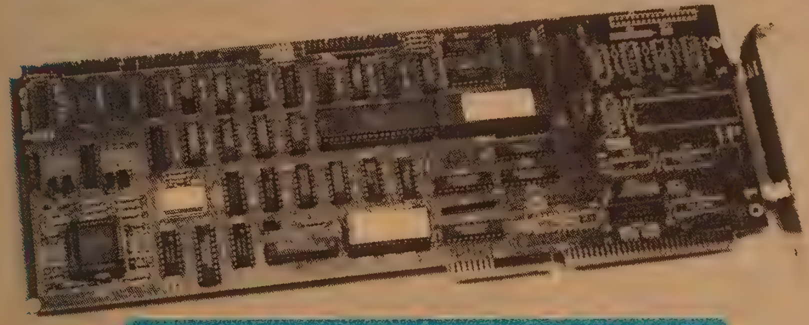

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REALIZABLE FANTASIES • BY JIM WARREN

Data Broadcasting Now; Vaporware Police; GOOD Products

A longtime fantasy is starting to be realized. Build on it:

Computer Data *From* Your TV

Did you see CNN report it, not realizing it's available for computer users? "It" is moment-by-moment traffic information from CalTrans. Ho Hum? *No!* Digital data's now being broadcast—hot stuff for entrepreneurial hacking!

The news entertainers—uh, *announcers*—said little about the technology (begun in England, almost 20 years ago). In the L.A. (Ch. 46) and San Francisco (Ch. 36) areas, **digital data for mass public use** is being transmitted in the vertical-retrace interval (an unseen part of a TV signal) without affecting the regular TV shows. The data encodes text and mosaic-graphics.

It includes business and world news, weather, ski data (seasonal), sports info, medical news, EPA and FEMA stuff, and much more. This is its first real push into mass public use in California—allowing endless alternatives for hackers and entrepreneurs.

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Fixing The Vaporware Problem

All but the most naively new computer users know of vaporware—exciting new "products," announced but unavailable. Their promoters' cliché: "We won't ship until the product is absolutely solid." *Hah!* [he snorts]. If we can't get it, it's not a "product."

There *are* examples of companies exercising the ethical fortitude of withholding product announcements until they actually have 'em. E.g., when Borland announced Turbo Pascal 5.5 with OOP extensions (object-oriented programming)—*hot dang!*—they distributed a six-foot high stack of *real*-ware, on the spot. When DigiFont announced super-cheap LaserJet font packages—by golly—they shipped 'em, literally, the next day.

Reasonable Forewarning Is Not The Problem

Announcing new products a month or two before availability *is* justified. Potential customers need to know of impending obsolescence, and need to know update costs. Also: announcements by unknown or tiny companies are usually not the problem.

Copyright © 1990 by Jim Warren. All rights reserved. Jim Warren founded InfoWorld, *the DataCast proposal for broadcast-based paperless electronic newspapers, Video Initiative, Wireless Digital, Initiative, Inc. and the nation's largest public microcomputer convention. He was founding host of PBS television's "Computer Chronicles" series, founding editor of* Dr. Dobb's Journal, *founding President of the Microcomputer Industry Trade Association and has chaired various computer professionals' organizations. He holds graduate degrees in computing (Stanford), medical information science (UC Medical Center), and mathematics.*

Unethical Bombing Raids

The problem comes when the announcement is by a major, "reputable" producer, deterring purchase of *real* alternatives already available from competitors.

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A Pressing Proposal: Publicize Delivery Histories

A responsible trade press can adopt this editorial policy:

Reporting of new product announcements will *begin* by stating projected delivery dates *and* will include summaries of that producer's delivery record for previously pre-announced un-products. Those who have a pattern of timely delivery earn a good reputation. Those announcing vaporware earn an equally justified reputation. *Let the readers be informed!*

E.g., in the 1960s, IBM was so many *years* late in delivering some long-promised 360 mainframe models, that Congress held hearings on the problem.

E.g., fake window-ware—*still*-unavailable capabilities, announced *years* ago—confused users, unjustly harmed competitors and illegitimately delayed purchases of *real* products from *reputable* suppliers.

Readers: Request and watch for this editorial practice in the trade rags you trust—and let your suppliers know you're watching.

Reputable vendors (*i.e.*, most of the industry): Demand this editorial policy where you spend your advertising bucks. It protects *you* against competitors' preemptive strikes.

This only works if the industry knows about it. Publicize the policy in a legible sidebar on editorial pages, several times, annually. And, it would help to editorially praise prompt producers periodically, by name. (I do.)

Human-Readable Diskettes

Fantasies for program publishers—about software sold on 3-1/2" diskettes:

There are entirely too many "preemptive strikes" by industry super-powers. With great fanfare, they announce powerful new products, and then fail to deliver for a year—or several years. They confuse customers, bombing users and competitors with false claims.

Use labels with white or light background colors—so we can add our own notes. State recording format and density on preprinted labels.

Include the product's *exact* version number on the serial-number label. E.g., mass-printed labels say it's ThingaMajig 2.0, but this week's copies are 2.0.7; thus, have "v. 2.0.7" included on their serial-number labels. Stick serial number labels on the disk and registration card—or at least include 'em in the product pack. Use only one serial number; not three or four.

Print product identity on the *edge* of diskettes, as well as on the front (e.g., T/Maker and Symantec diskettes). When a software product requires several diskettes, edge-labels should identify which is which, just like the face-labels.

But—an edge-label design problem: If they are rightside-up, when the face-label is visible (i.e., in the storage box), then they're upside-down in the disk-drive (but often not visible). Personally, I want to edge-read it in the storage box more than in the disk-drive. But it appears that the software producers thoughtful enough to print edge-labels have adopted the opposite practice.

Ah hah! The solution's simple: install the diskette drives upside-down! (I'm joking! I'm joking?)

Help Make Improvements

Clip this and send it to your most/least favorite periodicals and computer companies. We need "informed consent" regarding vaporware. And diskette ergonomics—already available from really *good* companies—make life *so* much better for us poor struggling computer hackers. (Aren't you glad X Corp uses this? Don't you wish everyone did?)

Standing On Shoulders, Rather Than Toes

Share fantasies with Jim Warren, Realizable Fantasies, 345 Swett Road, Woodside, CA 94062. Published proposals will be attributed to their authors unless anonymity is requested. ■

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Sharp's High-End 5541 Laptop

BY ED KAHN

Last spring I attended the Portable '89 trade show and saw all of the new products from a number of hardware and software suppliers. It was clear that portables were moving towards 40 Mb hard disks and better displays. At that time, the machine I most wanted to get my hands on was the Sharp 5541, because it incorporated most of these new features.

It has taken me until now to be able to actually get a unit and work with it long enough to write a review. Despite the appearance of the machine at that show, it was not released until January of this year. The 5541 is no longer the only machine to offer these features; nevertheless, after working with it for a while, I still give it high marks.

Sharp came out with a whole line of new laptops, of which this is the flagship model. The array includes entry level machines as well as this high-end unit. The 5541 is powered by an 80286, which can run as fast as 12 MHz. The display is a paper-white VGA. Standard configuration includes a 40 Mb hard disk as well as a high density 1.44 Mb 3 1/2" floppy drive. Internal memory is 640 K, but can be increased by up to 3 Mb. It weighs 14 pounds.

If it's within your price range, you'll buy it if you try it.

FEATURES

This machine is not inexpensive at a list price of $5595, but it does have all of the features most users want. The display offers a full 680 X 480 VGA emulation, with 16 levels of gray to distinguish colors. If you decide to use an external monitor, you can use any model you want. While there is full VGA emulation on the LCD that comes with the unit, a switch on the side lets you choose to use an external monitor. There are actually two ports for connecting a monitor, one of which is analog, allowing you to use either a multiscan or VGA display. I tried it with the Mitsubishi Diamond Scan ($899), which I have been using for the last few months, and found it offered a crisp image. In addition, there is a digital port for connection to CGA or EGA monitors.

Sharp is the first computer manufacturer that I know of that allows you a choice in the shape of the cursor. In the setup screen is an option that allows you to select the cursor shape: an underline, an underbar or a block. After fighting with so many computers on which you cannot find the cursor, this is a real pleasure. I hope other manufacturers will follow Sharp's lead.

The keyboard for the Sharp 5541 has a wonderful feel and adequate layout. There are a few keys I would have preferred to be placed elsewhere, but for the most part this is quibbling. My main objection to the keyboard is the inclusion of an "Fn" key, which you must use to hit Home, PgUp, PgDn and End, as well as several other frequently used keys. Very few portables have been able to overcome this problem to my satisfaction, but there have been layouts that did not force you to compromise in this way.

The saving grace in the Sharp's case is that you can connect an entire keyboard of your liking. This is worth lots to me, because I can use my favorite keyboard, Northgate's OmniKey Plus ($119), except when I am literally on the road, rather than at my destination or at home.

The keyboard port requires you to use a PS/2 compatible keyboard, but what would you expect with a computer that incorporates so many state-of-the-art features? In any case, I prefer this setup to ones where you can only add a numeric keypad. Nothing is as personal as taste in a keyboard. I recently showed a computer to a friend and commented that I hated the keyboard; he replied that he thought it was great. So there you go...

OPTIONS

Sharp offers a number of options, but strangely overlooks others. The most glaring oversight is that there is no provision for connecting an external disk drive. This is strange, since so much attention is otherwise given to adequate storage options with the huge hard disk and high density floppy drive. I know of no way to connect a 5 1/4" disk drive, although there are provisions for this on the less expensive models in this series.

Likewise, there is no way to connect a second 3 1/2" floppy drive. This is less necessary, because Sharp has set the computer up to accommodate a virtual drive—if you copy a disk from A: to B: drive, it will instruct you to remove the source disk and insert the target disk in the B: drive, thus fooling itself into thinking that it has two 3 1/2" drives.

In the internal memory department nothing except money stands in the way of expanding to a maximum of 3.6 Mb, which can be configured as either extended or expanded LIM 4.0 memory. The basic memory expansion card ($845) has one megabyte of memory. A 2 Mb module ($1,495) that fits onto the memory expansion card is available to take you up to the maximum configuration.

Sharp offers a pair of modems which require dealer installation. The 1200 baud model ($399) as well as the 2400 baud unit ($499) offer you the option of using the modem or switching the card to serve as a second serial port. The basic computer comes with only one serial

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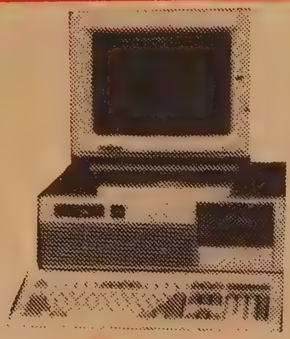

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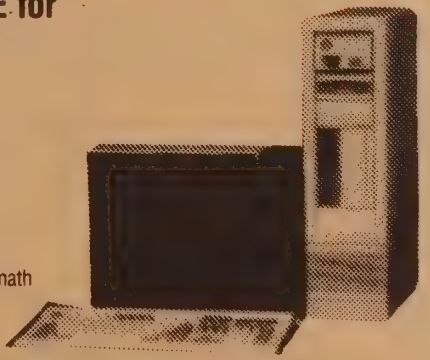

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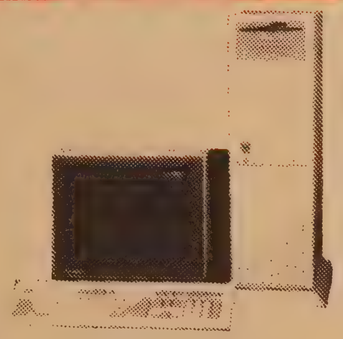

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port. If you do not want the internal modem, you can get a card that has a second serial port ($99) for a good deal less money. These Hayes compatible modems, neither of which I have tried, do not appear to have any special features such as data compression.

BATTERY OPTIONS

The included internal nickel-cadmium battery pack should last for about two hours with a maximum charge. The setup program includes a number of energy-saving features, which allow you to turn off the backlighting on the screen, as well as the motor for the hard disk after a user-selectable amount of idle time. While this is not as long a period of battery life as some of the other units, Sharp does offer an option of an additional "battery slice" ($399), as they like to refer to it in the documentation. With this add-on battery, which can be removed when not needed, battery operation can be extended up to more than five hours.

An AC adapter is, of course, included with the unit, and the batteries can charge while the unit is in use. Battery recharge time is a reasonable four hours, or five with the slice attached.

The slice, by the way, can also be charged when it is disconnected from the computer.

In addition to these batteries, there is an internal battery that keeps the clock going and maintains memory for the setup configuration. This battery is charged either through the rechargeable battery or from the AC adapter whenever the computer is in use. If this battery, which only lasts for about three weeks if you don't use the machine, needs recharging, the instructions say to leave the computer on for about 50 hours. That is not a misprint.

Somehow this arrangement doesn't seem optimal to me. I think a lithium five-year battery or some other arrangement might be preferable. I feel nervous about a backup battery charge lasting only three weeks when you don't use the computer.

DOCUMENTATION

The documentation for the 5541 is more than adequate. While it is simple enough for the beginner, it contains detailed instructions for the more advanced users. The introductory chapter is written for people with no background in computing and tells things like how storage works, what an operating system is and other useful information. As you move farther on, the instructions tell you how to do a low level format on the hard disk and configure it as two logical drives.

Fortunately this is not one of the overblown books that nobody can wade through. It is rather a bare bones manual that gives you enough detail, but not too much.

ETC.

The computer comes with MS-DOS 3.3 and GW-BASIC 3.2. It is interesting that even though Sharp included a 40 Mb hard disk, they stayed away from DOS 4.01, which would allow users to use the disk without partitioning it into two drives. While I like MS-DOS 4.01, I have found that it is incompatible with some of my favorite programs unless you request an updated version from the software manufacturer. Most vendors have made the slight changes to enable their programs to work perfectly with MS-DOS 4.01, but to avoid possible problems, Sharp was probably wise to stick with MS-DOS 3.3.

The line of accessories is rounded out by a choice of nylon ($99) or leather ($199) carrying cases.

This is a completely satisfactory computer. If it's in your price range you'll buy it if you try it. ■

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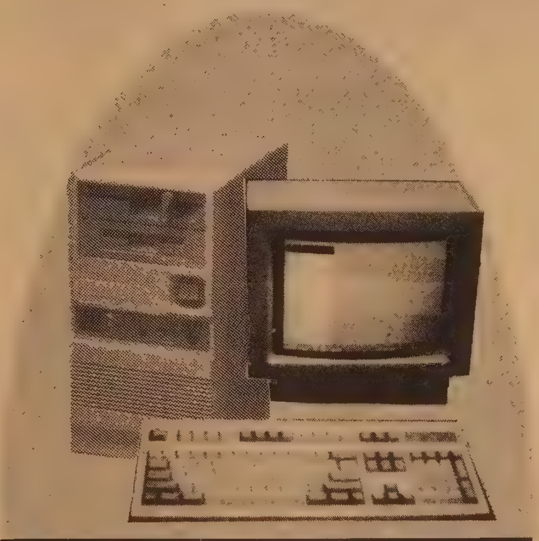

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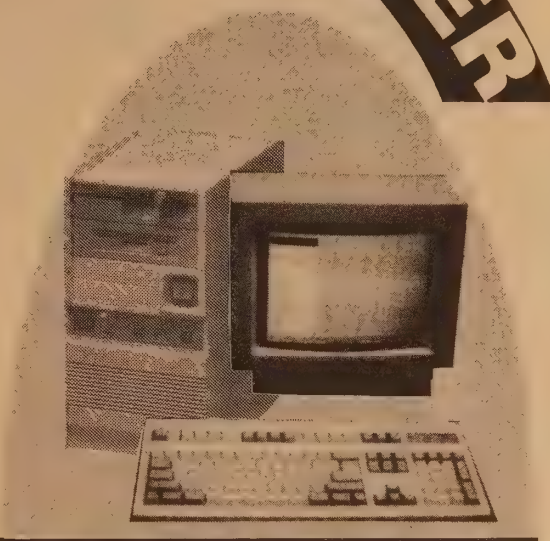

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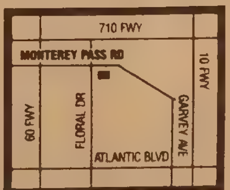

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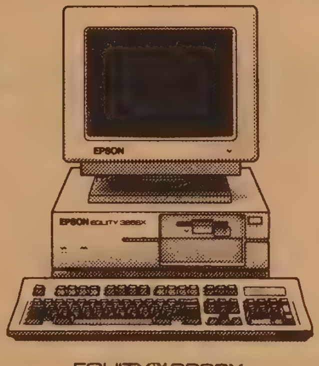
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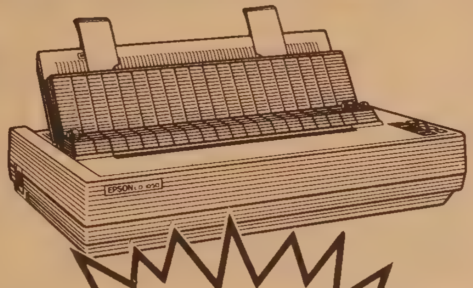

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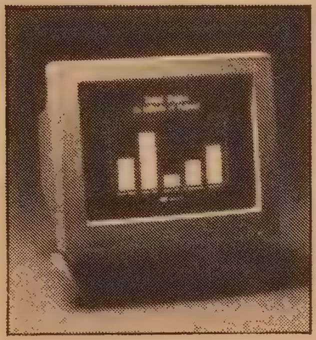

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Information

The Business Battlefield

BY BROCK N. MEEKS

TELECOMUNICATIONS

Competition—it's the lifeblood of business. Whether you compete in the high-powered arena of corporate mergers and acquisitions, or in the trenches of the board room, your success often depends on how much information you've been able to gather and analyze. The process of gathering this information is embodied in the glitzy high-tech phrase "competitive intelligence" (or just "CI" to the cognoscenti).

Some call this a strategy of "information wars," and at times it resembles the covert world of spy vs. spy. Indeed, hardball CI tactics may include stunts such as taking aerial photos of parking lots (to count employees), rifling through corporate dumpsters, counting box cars, and conducting fake interviews. Most CI experts, however, prefer using the resources of online data bases. Why? It's completely legal—all information retrieved online is publicly available.

"There is no need for a corporation to engage in 'industrial espionage'," says Rob Aaron, a principal of Aaron/Smith Associates, an Atlanta-based information-gathering firm. "Our firm specializes in gathering data from more than one thousand data bases," he says. "If you spend enough time with the information gathered, you can draw amazingly accurate conclusions," without resorting to questionable methods.

ONLINE ARSENAL

Alfred Glossbrenner, in his book *How to Look It Up Online*, says it doesn't matter "whether you're buying stock, acquiring companies, or maneuvering for a competitive advantage—you can vastly improve your chances if you've got the information." The majority of this information is available online. In his book Glossbrenner also notes, "Business information is the hottest, most competitive section of the electronic universe right now." It is an expanding universe.

According to Matthew Lesko, author of *Information U.S.A.* and *The Computer Data and Database Source Book*, there are more than three thousand online data bases available to the public. All these data bases result in a kind of online arsenal, and everyone from giant multinational conglomerates to small niche businesses has access to the same "information weapons."

"It amounts to a classic 'David and Goliath' showdown," says Carol Galvin, marketing manager for Business Research Corporation's InvesText service. Online data access "gives the bigger companies more clout (they can afford bigger CI staffs; they spend more money for CI), but it's also giving the smaller companies a better slingshot," she said.

Be it slingshots or cannons, CI experts choose their weapons carefully. Often it is the knowledge of a single, obscure data base that provides a vital piece of information.

Aaron points to a typical example of a little-known data base that seems tailor-made for CI applications: PIERS (port import and export research service) run by Knight-Ridder. "It is an online gold mine," says Aaron.

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PIERS tracks every incoming and outgoing ship—in every US port—by uploading each ship's manifest to a central computer. In addition to the manifest, each shipment's destination and supplier are also input on the computer.

This data base is extremely useful for tracking how much of a competitor's product is being exported and where it's going. It is also useful for assessing the general health of a particular industry.

CI AT WORK

Online sources are essential for gathering what Aaron calls "outside information." Most well-run companies have a good idea of the types of information they generate, such as financial information, customer and product lists, and the like. However, Aaron notes: "Most companies are ignorant of how much information is available for tracking a competitor. So we're hired to do their homework."

Aaron points to a case history. One of his clients (he declined to supply the name) wanted to buy a factory producing a cellophane-like product. "Our client needed to know what a reasonable asking price would be for the plant. So we set out to arm them with all the relevant facts," he said.

Aaron started by using the InvesText data base to discover the owner of the plant: a multinational conglomerate. But there was

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no information on the output of the plant or its net worth, both indispensable pieces of information. To provide that information, Aaron first searched through the local business press. "Executives of regional firms are more comfortable when talking to the local trade press," Aaron said. "And they'll often spill a lot of details to a local reporter. That stuff doesn't get reported in *The Wall Street Journal.*"

To gather regional press information, Aaron says he might tap into a data base such as Business Dateline, Regional Business News, or Area Business Databank. These data bases cover several hundred local newspapers and business journals.

Using information gathered from these data bases, Aaron discovered that the target plant was undergoing a major renovation, tripling its capacity, and had recently put on a hiring drive. Then, by tapping a biographical data base, such as Marquis's Who's Who or the Standard and Poor's Register, he found that the person in charge of the factory had been promoted to the head of the plastics division, which indicated to Aaron that the parent company had a continued interest in that particular product line.

By monitoring the local newspaper, via the VU/TEXT data base, Aaron found a complete description of the plant's machinery and the refurbishing cost, some $12 million.

"With all that information on the table, the acquisition talks were much more open," said Aaron. "The plant's owners figured they had nothing left to hide. My client was in the driver's seat. They knew if the other company was blowing smoke or were serious about making the deal."

BEYOND POWER BROKERS

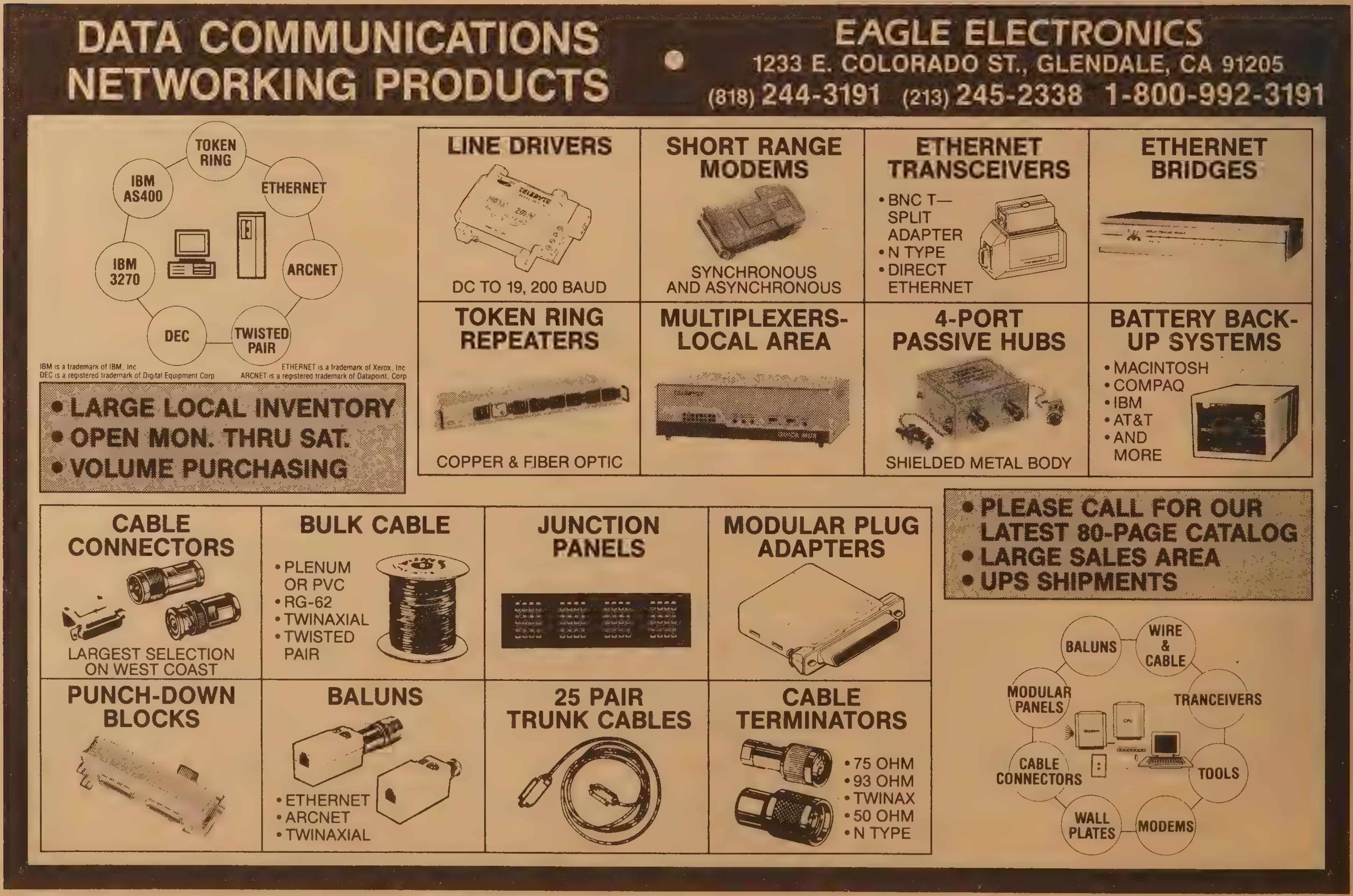
Most of us will never spearhead a hostile takeover attempt or a billion-dollar merger. Does this mean that CI can't work for you and me?

"Absolutely not," says Matt Potter, former city planner, political aide and newspaper reporter, who now heads For The Record, a self-styled "information consulting firm." Potter describes his work as helping clients gather information as mundane as trust deeds or as explosive as corrupt political transactions.

Potter believes that CI can "help make the system work for you, instead of against you." The "system" Potter is talking about starts with local government and escalates to the federal level.

Potter believes that small businesses can especially benefit from CI. He cited a case study of how a small shop owner used CI to expose an unfair redevelopment project that would have destroyed the small shop's business. Using mostly newspaper data bases, the small businessman uncovered unethical ties between the proposed developer and a local politician. He took this information to

CI can also benefit an individual's career. Anyone from an astrophysicist to a zoologist can benefit from developing a CI strategy revolving around a chosen profession. There are two ways to do this: hard or easy.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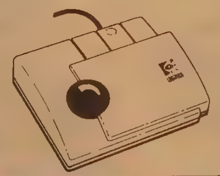

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But CI can also benefit an individual's career. Anyone from an astrophysicist to a zoologist can benefit from developing a CI strategy revolving around a chosen profession. There are two ways to do this: hard or easy.

The hard way is to read every professional trade journal published in your field, and scour the daily newspapers. (This gets the job done; however, you'll have no social life to speak of.)

An easier way is to enlist the power of SDI, not the "star wars" technology, but the CI technique known as "selective dissemination of information." Aaron defines SDI as "continually monitoring a data base, in reference to a specific topic, using a pre-defined set of keywords." In essence, SDI is nothing more than a process whereby you set up an electronic news clipping service.

A good example of this SDI technique is the News Flash service offered by NewsNet. News Flash will continually check all its incoming information (from hourly news wire copy to more than three hundred industry newsletters) against any keywords or phrases you've asked it to look for.

For example, a scientist doing research on superconductivity, might simply specify the word *superconductivity*. Thereafter, each time NewsNet receives a new piece of information that contains the word "superconductivity" it automatically places the article (in full text) in a special holding file.

When it's convenient, the scientist logs on and downloads all the information waiting in the "clip file." Now instead of manually scanning several trade journals or newspapers, and then clipping those articles, the scientist has the full text of these same articles stored on disk for easy categorizing and recall.

This SDI technique can easily be adapted to monitoring your competitor (by specifying a company name) or a specific product line.

THE REAL WORK

Although CI analysis is great for gathering large amounts of raw data, someone still has to pull all that information together; online work is only the beginning of a fully formed CI strategy.

Potter points out that organization, looking for patterns, trends or gaps, followed by more research to augment what's been missed the first time around, is where the "real intelligence factor" plays in the CI field. No one, he contends, can say that online data bases provide all the answers.

And despite the given advantages of online access, Potter is quick to point out: "A person's brain is still the best source of data anyone can tap." ■

> **Be it slingshots or cannons, CI experts choose their weapons carefully. Often it is the knowledge of a single, obscure data base that provides a vital piece of information.**

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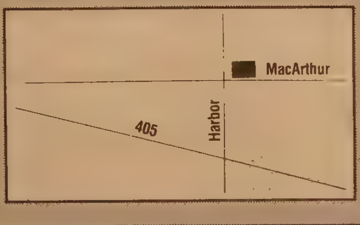

Compaq's SystemPro: Dawn Of The Super Server

BY DAVID SLOVES

LOCAL AREA NETWORKS

For years, the PC industry has shaken its fists at the minicomputer world. Now the knockout blow appears imminent. Like it or not, the newest generation of microcomputers comes equipped to surpass minicomputers as the network server of choice for high volume departmental and wide-area networks.

Already, Compaq's SystemPro appears ready to claim a leadership role in the realm where the DEC VAX, HP 3000, IBM AS/400 and Wang VS systems have been running the show. Why the extravagant claims about a machine shipping for less than three months? Why will the SystemPro truly unseat minicomputers where previous high-powered PCs have not?

Simply put—the SystemPro was designed as a minicomputer. Yes, it carries the style and lineage of a PC. Yes, it utilizes conventional PC operating systems—DOS, OS/2, NetWare, LAN Manager, and SCO. Never mind all that. Once you take it apart, the beauty of this system cannot be denied. And Compaq's hard-earned reputation for quality and reliability takes much of the fear factor out of making the decision to readjust to this new world.

SYSTEMPRO DESIGN INNOVATIONS

Start with EISA. It *was* worth the wait. Bus-mastering and AT-bus compatibility lets us have our cake and eat it, too. No, the fancy bus-master boards don't exist yet, but they are coming. And until they do, we can run all of those nice familiar boards whose drivers work. When the new boards hit, we just pass the standard boards off to another system.

Just seeing Compaq's Intelligent Disk Array controller board in action gives you a fabulous taste of where we are going. At last, disk mirroring apart from the operating system, and disk throughput that makes you understand why those large database queries that take minutes on your PC take seconds on a minicomputer. Up to 48 Mb/second transfer rate, if you have a full four-drive array installed.

Then there's the system memory. Enough capacity so you won't need to worry. Not soon, anyway. Hundreds of megabytes (up to 256 Mb). And with prices going down and density going up, the days of the 64 Mb DRAM servers don't look too far off. And all running at 33 MHz off of the 32-bit bus. And yes, third-party memory boards look imminent. (Albert Wong, the "A" in AST Research, has a new company called AMKLY Systems that looks like a good bet in this arena.)

Finally, you have to love the modular design of the SystemPro. Eleven slots, including seven for 32-bit EISA boards (or conventional PC/AT boards). A 300-watt power supply to handle whatever you might want to install. And enough drive bays to handle four or five devices.

BUT WHAT DOES IT DO?

So what does all of this high tech wizardry do for you? It provides you with a platform that does the toughest jobs on your list—fast and dependably. It brings you real life multiprocessing for SCO/UNIX (via Corollary's Symmetrical Multi-Processing extensions). And it flat-out performs faster than anything you've run without a cooling system in a multiuser environment.

Sure, there will be faster straight-line performers (including Compaq's own DeskPro 486—though a 33 MHz 486-processor board for the SystemPro has been announced).

For those of you who need a robust server for 50 to 250 users, linkage to a wide area network (with hundreds or even thousands of users) or a dedicated database server, the SystemPro brings you the performance for which you paid $300,000 or more last time around (even if that was only *months* ago). For about $35,000—fully loaded (including 840 Mb, 16 Mm DRAM, 2.2 Gb backup and a copy of NetWare 386, LAN Manager 386/486 or SCO 386). Scary.

The most impressive aspect of the SystemPro thus far comes from the Intelligent Disk Array. Compaq was able to utilize bus-mastering to provide both synchronous access to multiple drives (reading or writing to more than one disk at a time) and built-in disk mirroring or guarding (a compression scheme that only uses 1/4 of your disk capacity, versus 50% for mirroring)—without the help of the operating system. The elegance of this design includes linking the drive access directly to the 32-bit high speed memory, furthering the ability to move data from point to point. For distributed databases, this alone will make you an EISA believer.

As board technology evolves, the EISA design will allow network bridges and gateways to function with the same simplicity found in the drive array technology. This functionality will allow far faster network response time without giving up the ease of wide area communications that helped justify installing your network at the outset. These developments, along with the maturation of the various multiuser operating systems for microcomputers, represent significant contributions to the implementation of true enterprise, multiplatform networks.

The brilliance of the EISA concept (as well as of its rival sibling—IBM's Micro Channel Architecture) lies in the ability to offload operating system overhead, particularly I/O handling, onto comparatively low-cost dedicated microprocessors. Bus-mastering architecture closely parallels the use of RISC implementation in its ability to minimize the functions being handled by any one processor in a system. We will certainly see RISC processors going into EISA boards during the next year—particularly for graphics and other high-horsepower functions. Hot stuff—even for an industry filled with jaded hardware consumers. ■

The SystemPro provides you with a platform that does the toughest jobs on your list—fast and dependably.

NEXT TIME:

Why you should be putting your CAD systems onto a PC-based network.

David Sloves is the founder and CEO of Desktop Products, a systems integrator specializing in wide area networking (including PC-to-PC and PC-to-host) and computer-aided design. The Emeryville-based company provides sophisticated microcomputer-based solutions to large organizations in Northern California and to numerous Fortune 500 manufacturers and service firms throughout the United States and Canada. He can be reached by phone at (415)428-1035 or by mail at 1316 63rd Street, Emeryville, CA 94608.

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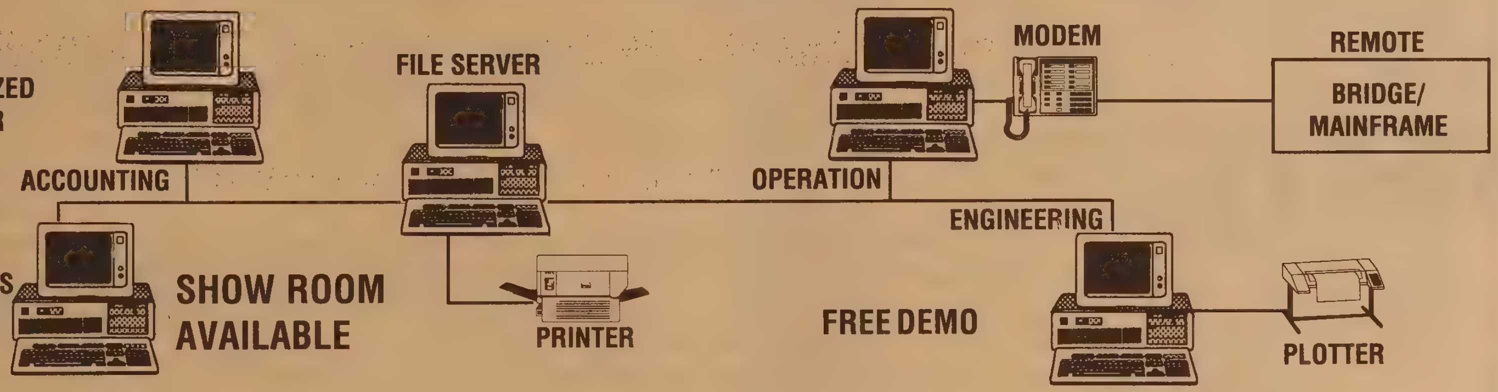

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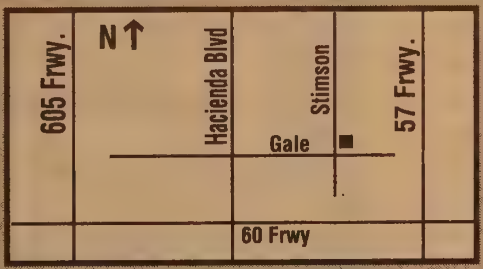

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Going Live

Accounting Software Installation Guidelines

BY SUZANNA MUSICK

I'm not going to tell you the precise and perfect way to install your accounting software.

Why? Because I can't.

The successful installation of a software program depends as much on the people involved as it does on the technology. All of the people, from upper management to the users. Everyone must be "on board."

There is a methodology to installing accounting software. (The words "installation" and "conversion" are used interchangeably in this article, although computer consultants generally see a difference between the two.) In earlier articles I discussed the steps leading to the decision to automate, and how to go about selecting the best software for your needs. In this article I'll set out the guidelines which should help you to get through the installation process without too many battle scars. These guidelines are based on the following assumptions:

OFFICE COMPUTING

- **You have selected an accounting software program and are now ready to begin using it;**
- **The accounting software is an "off-the-shelf" program and not custom written;**
- **You are installing multiple modules (e.g., General Ledger, Accounts Receivable, Order Entry, Inventory, Accounts Payable, etc.).**

INSTALLATION GUIDELINES

1. PREPARE FOR THE INSTALLATION. Don't try to tackle the job during your busiest season or some other unrealistic time (such as during a year-end close or annual audit). Even in the best of circumstances, an accounting installation is a great deal of work. While going to an automated system is almost always an improvement for the business, it normally requires more effort than anticipated. The conversion process requires you to continue with your regular work while learning to operate the new software program and entering all your accounting data. Be realistic when planning interim and final completion dates.

Good software provides you with meaningful reports based on the structure of your accounting codes. Carefully examine the software's capacity to generate specialized reports. Compare them with your current numeric or alpha system; you will probably have to make changes to take advantage of the program's best features. Review your chart of accounts, vendor and customer numbers, inventory and job cost coding, and any other tracking codes which will be entered into the software program.

Remember, you would not have purchased the computer system if it was not going to offer you advantages over your current operations. Take the time to figure out how to get the most out of your newest employee.

To illustrate, an inventory number might be structured so that the number itself has meaning (what we call a "smart-part" number). HHLRSO might signify household furniture, living room and sofa. Some programs allow you to then produce reports on any or all sections of that number. You could print a report on sales of just sofas, living room furniture vs. dining room furniture, or on all household furniture if you wished.

2. PERSONNEL ISSUES. You wouldn't think of asking your accountant to fix your car, so don't ask a nonaccountant to do your bookkeeping. Many companies with automated accounting systems mistakenly believe that anyone can "do" the books.

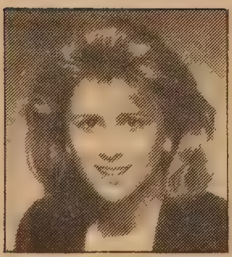
I'm not saying that a clerk cannot enter invoices or record new vendors in the system. However, don't expect clerks to produce meaningful financial statements unless they receive assistance. The person responsible for the financial statements must know what a journal entry is, be able to tell a debit from a credit, and recognize the difference between assets, liabilities, and owner's equity.

Be sure that all those employees who will be operating the system are properly trained in the program's use. Your accounting staff is much more likely to embrace the new technology if you help them become comfortable with it. Many programs have tutorials and lessons, and your staff should use them.

3. PUT SOMEONE IN CHARGE. Construction jobs have a project manager who is responsible for ensuring that all tasks are completed accurately and on time. You need this kind of person in an accounting conversion as well.

The accounting project manager should be charged with responsibility for all facets of project completion. Work should be scheduled to keep the project moving along smoothly, but not at such a pace that staff members burn out. The project manager should also ensure that a filing system for management and "audit trail" reports is established, and verify that copies of your computer data (backups) are made and stored properly.

4. TAKE TIME TO BECOME FAMILIAR WITH THE SOFTWARE. I've learned that



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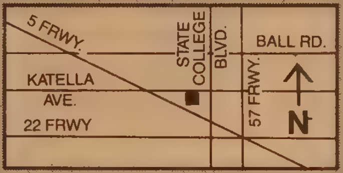

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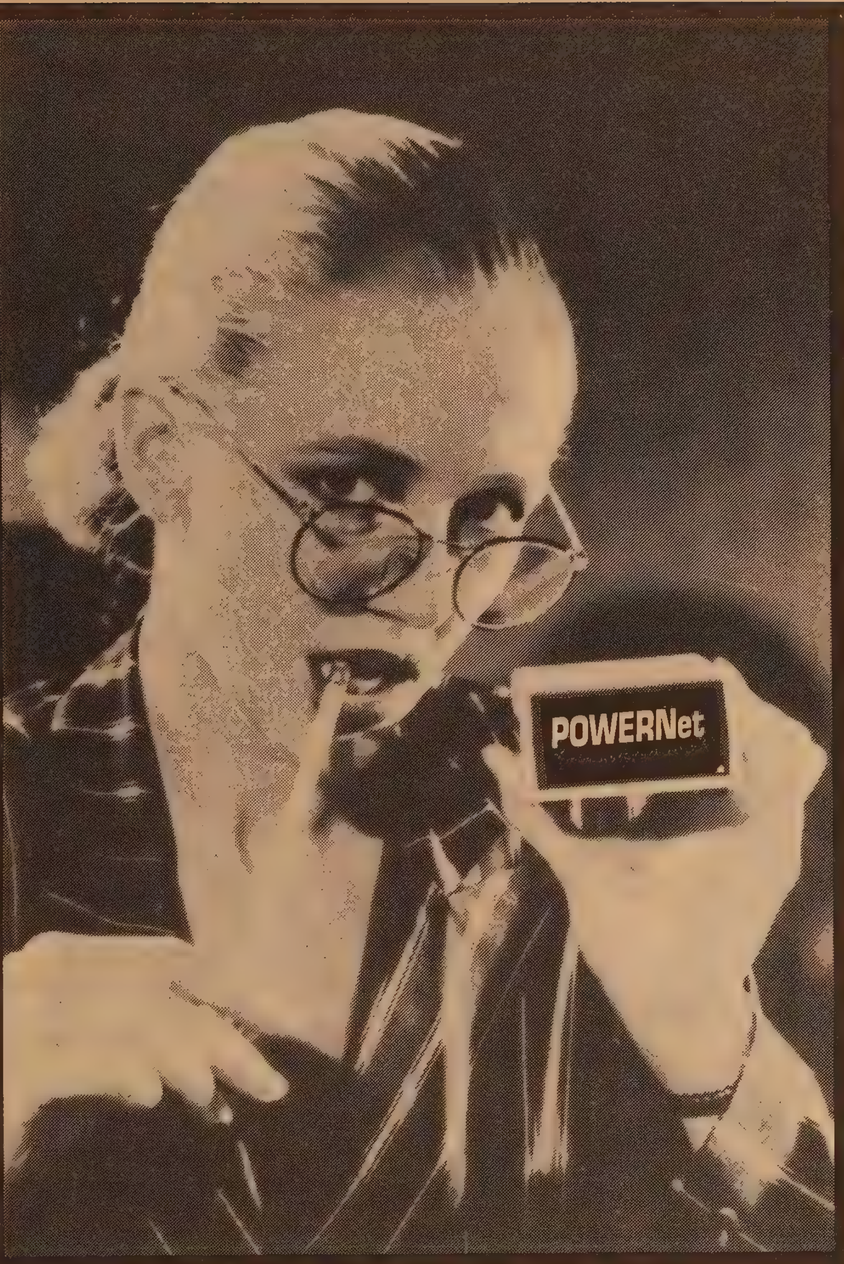

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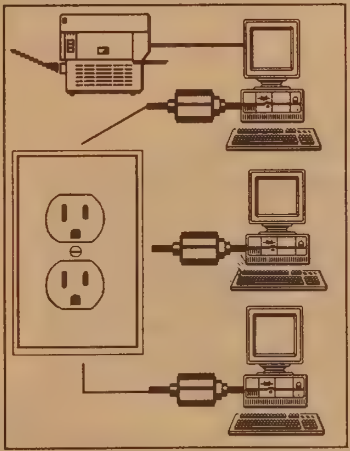

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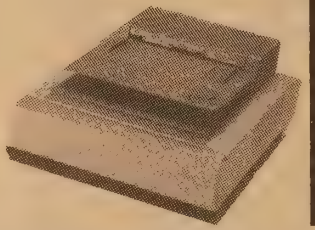

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> **More valuable than the software manuals is developing your own set of procedures documenting how you use the program.**

asking clients to allow themselves time to "play" with their new software program is asking a lot. Nevertheless, experimenting with the software before putting it "on line" can be a very valuable learning experience.

Before you invest substantial time and money in the conversion of your current accounting system, test the new software program. Take a few transactions from each accounting area and "walk" them through the system from start to finish. Set up a customer account, generate invoices or statements, post them to the general ledger, and look at the financial statement.

This process will help you to understand the inevitable differences that exist between your current system and the new one. Remember, you would not have purchased the computer system if it was not going to offer you advantages over your current operations. Take the time to figure out how to get the most out of your newest employee.

5. TAKE SMALL STEPS. Don't try to do too much at one time. This is important. Prioritize and determine where to start, and how the project will progress. If possible, "integrate" (merge) one "module" (accounting function) at a time. Do one piece of the conversion and do it well. Get results that everyone can feel good about, then move on to the next step. For example, convert your Accounts Payable and start taking advantage of vendor discounts before tackling your General Ledger. When you get the General Ledger set up, begin producing financial statements. Finally, once you are confident that each installed program functions properly on its own, begin integration. For example, have Accounts Payable post directly to the General Ledger.

The biggest benefit to breaking the project down into separate components is that you can use the knowledge gained in the first phase for all subsequent parts of the conversion. In Accounts Payable, as you learn to enter vendors and invoices and to void checks, the mistakes you make (and learn from) will save you time in the other modules.

You won't be able to avoid making mistakes. Take the opportunity to learn from them early on so that you don't replicate them throughout the system. Once you have the process down (usually a month or two), integrate the modules together.

6. PREPARE AN OPERATOR'S PROCEDURES MANUAL. Like most software instruction manuals, accounting manuals leave a lot to be desired. Even if they are written in English (not computerese), they are written to fulfill the needs of many different types of business users.

More valuable than the software manuals is developing your own set of procedures documenting how you use the program. The manual should be written in such a way that if the bookkeeper is not available to operate the system, someone else can step in and rely upon the documentation for guidance. The procedures manual should cover the daily, weekly, and monthly tasks you perform and should include any logs, checklists, or other forms you use to manage the system.

7. ENSURE DATA INTEGRITY. As discussed earlier, converting from one system to another is a lot of work, so make sure that the information entered in the new system is accurate. Run tape totals on batches of invoices being entered and check your total against the computer printout to ensure that they agree. If they don't, find out why. Resolve the discrepancies as they occur, rather than trying to dig back through a month's worth of data to find an error.

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Making copies of your programs and accounting data is the least expensive form of insurance you can buy.

8. RUNNING PARALLEL. For management to gain confidence in the new system, they must be assured that data are being entered correctly. Running parallel is the only way to do this.

Reconcile your computer-generated reports to your old ones. Check to be sure that customer accounts are accurate, that financial statements agree, and that the inventory valuation matches. If you have monitored and checked everything as it was being entered, this should be a relatively painless process. Once you have confidence in the new system, you can drop the old. We like to see two complete months of clean processing before we discontinue the old system.

9. DEFINE, ORGANIZE, AND FILE REPORTS. Forget the myth of the "paperless office." Computers generate more paper, not less. Part of your job will be to discern which reports must be kept and which are superfluous.

It is critically important to maintain a "through-the-computer" audit trail. An audit trail allows you and your CPA to determine where the figures on your financial statements came from. If you want to see which customer invoices make up the $50,000 you have in Accounts Receivable, you should be able to print a report showing the detail that totals $50,000.

Establish which financial statements and other management reports are to be filed and kept. Everyone involved should know which reports must be kept, and they should be filed regularly (daily). Regular filing saves you the grief of digging through reams of paper looking for that one report your boss or CPA is asking for *now.*

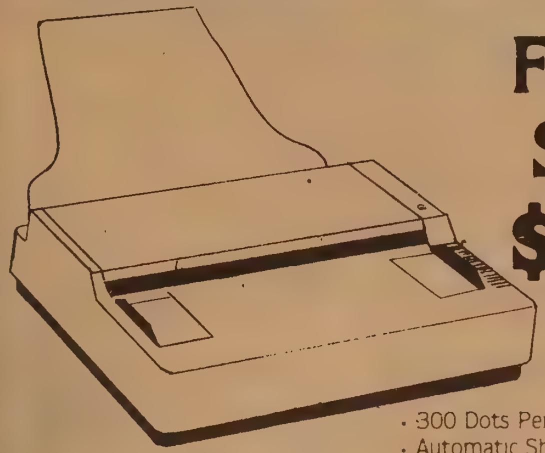
10. INTERNAL CONTROLS. Who has access to the system and who doesn't? Have you decided who can enter in invoices, and who can write checks (what CPAs call "separation of duties")? Whatever your parameters are for accounting data security and internal control, they must be defined and passwords entered into the system.

Further, the person entrusted with setting up and maintaining passwords should not be the only person who knows what those passwords are. The president of the company, the CPA, or banker should also have knowledge of the passwords maintained in your system. You do not want to find yourself locked out of your accounting system because of an unhappy employee or other unfortunate circumstance.

11. BACKUPS. Making copies of your programs and accounting data is the least expensive form of insurance you can buy. A backup copy of your programs should be stored in a safe place, separate from the originals. Data should be backed up daily, and periodic copies should be taken off site. Exact backup policies should be determined and enforced.

Not maintaining frequent backups can cause you much suffering, and possibly even loss of business. What if your computer malfunctions, or worse, gets stolen? Replacing the program is easy. You buy a new copy and install it on your new computer. Your transaction data represent an altogether different problem. If you do not maintain regular backup copies, your only option may be to re-enter everything from square one. Make your backups regularly, label them accurately, and store them wisely.

I hope that this article is helpful to those of you who are getting ready to install an accounting system, or are in the process of installing one. While I have tried to stress the caveats of an installation, I don't want you to feel that it's more work than it's worth. The return you will get from your new system should far outweigh the effort you must expend to get there. ■



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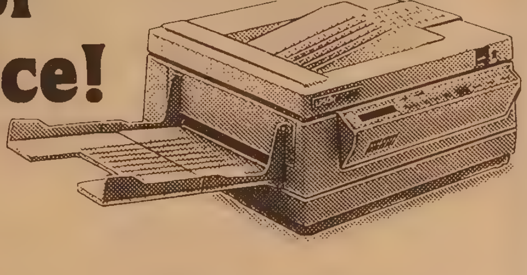

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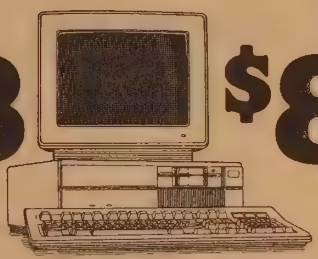

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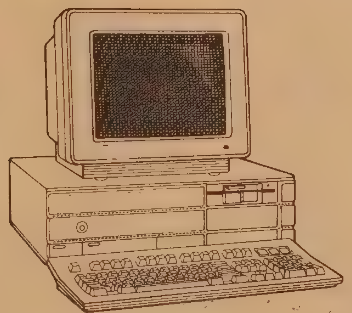

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From Consumer To Corporate

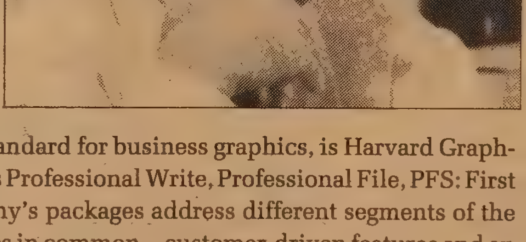
Software Publishing Corporation In A New Decade

By Mary Eisenhart

When Fred Gibbons started Software Publishing Corporation in 1980, just about everybody who used a computer at all was a beginner, and easy-to-use applications were vital to getting the personal computer off the hobbyist's workbench and into the mainstream of business. SPC's PFS product series was tailor-made for this purpose.

The ensuing ten years have been eventful for the entire industry, often terminally eventful for the hopeful young startups of 1980. But Hewlett-Packard veteran Gibbons has guided his company through the consumer-market shakeout and positioned it firmly as a leader in the corporate market.

PHOTOS: JAY BLAKESBERG



SPC's best-selling product, essentially the DOS standard for business graphics, is Harvard Graphics, but its product line also includes Softsel favorites Professional Write, Professional File, PFS: First Choice, and PFS: First Publisher. While the company's packages address different segments of the business market, they have certain key characteristics in common—customer-driven features and an emphasis on ease of use.

After coming through the turbulent '80s with flying colors, Gibbons is busy positioning his company to address the new challenges of the '90s. SPC is not given to identity crises—it perceives itself as serving an essentially Intel-based business market which currently uses DOS and will eventually migrate to OS/2, and that's where the company's putting its resources. Says Gibbons, "We're trying to meet the customer's demands for multiple platforms. But I won't do it at the sacrifice of being best of breed for a given architecture. I've got to do that, because history says that's how you win. And how you lose is trying to be all things to all people."

You're about to celebrate your tenth anniversary. Briefly, what were the origins of the company, and what kinds of changes have you seen in the industry during the last ten years?

Well, we were very fortunate to be part of an incoming tide, and as a wise friend of mine once said, "When the tide comes in, even the dead fish rise." (laughs)

I was working at Hewlett-Packard as a product manager; I ran into Steve Jobs back in 1978. Apple had about 30 employees and was looking to do about $10 million in sales. He got me interested in personal computers.

He had a way of doing that...

And still uses that way.

I'm a software guy by trade; I have a BS and an MS in computer science. I've always been interested in software, and he got me interested enough to start poking around. I began to think up the concept that maybe we're going to need a bunch of authors creating

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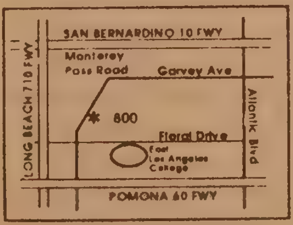

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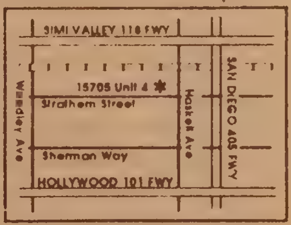

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software, like music and records and publishing—so I said, "Ah! Software Publishing Corporation!"

At that time software was on cassettes—it wasn't even on floppy disks yet. So I started thinking about product ideas and assembled a team of people to initially help me launch the first product, which was PFS: File for the Apple II. That product came out just about the same time as VisiCalc, just about the same time the floppy disk drive came along.

"What was happening around the fall and winter of 1985 was the emergence of the 286, the power user, and the corporate standard. And here we were building low-end simple products for first-time users, so our sales did begin to decline."

We positioned the company to keep it simple for first-time users. Everyone was a first-time user, so that was a pretty good place to start, a pretty good thing to focus on. We also focused on publishing software from independent authors—we had one in-house author, John Page (laughs)—but then it became very clear to us that the quality of product, reliability and so on, was better when it was done by an internal engineering team. So we switched our focus—we were literally only three months old, and we switched it from publishing to internal development, but left the name the same.

And on merrily down the road we went. We had a half million dollars in sales the first year, two million the second year, and raised some venture capital along the way. The first-time user was still king; the Apple II came along, the PC came along from IBM in '81. We were building the right product for the right customer at that time.

We continued on that theme, and modeled the company after a Procter and Gamble type of thing—consumer marketing, shelf space, retail, that sort of thing. Again, it was very successful, successful enough to get us up to $20 million in sales. We took the company public in November of 1984.

We rolled on for yet another year still pushing the low-end product line—simplicity, ease-of-use, that sort of thing. Interestingly enough, we were using manufacturer's reps, third-party subcontractors to sell our products to retail, go door-to-door and sell it along with several other lines of product. The bad news was that when they weren't selling our product, or it was not selling as well, they'd just sell something else. Because they had no particular loyalty to our product line.

The result was that when marketing conditions began to change, we were kind of deaf, dumb and blind. We weren't hearing back what was going on, because these people would just merrily go on and sell something else instead of our products, and never feed back to us that we were beginning to show weakness in our product lines.

What in fact was happening around the fall and winter of 1985 was the emergence of the 286, the power user, and the corporate standard. And here we were building low-end simple products for first-time users, so then our sales did begin to decline.

In the winter of '86 we began to see significant decline in revenues. The company was now public, so we were very visible. We took stock of what was happening, and it was clear to us that there was a high drive toward corporate, that power users were coming to be the majority buyer, that they perceived our products as too simple for their needs, and therefore were not purchasing them.

The result was that we had a council of elders to decide what we were going to do about this. We could either follow where it leads, which is to become a low-end consumer products company, or we could try to break out and go after the high end. We felt that our product image and reputation was sufficient to give us a shot at trying to go upscale. But it required some things to change—as Honda, when it decided to go after BMW, had to come out with Acura. It was not credible that Honda could ever compete with BMW. So our original product line, PFS, could never be perceived as a powerful product line.

We decided that the best way to get there was through acquisition, so we acquired Harvard Software in Boston. It had a project management product called Harvard Project Manager. We then invented and built internally Harvard Graphics.

Which is currently the industry standard?

And 60% of our revenues.

So we took the positioning of Harvard—the analogy being Acura for Honda—and we built on it with our graphics product, and repositioned it as a high-end product, with a new fresh image, new clean positioning, not tainted with the low-end image of PFS and so on.

As a result of good product execution, good customer knowledge, and a lot of people backing it, we finally got a foothold in the high end, and then we began to bootstrap more in that direction.

We upgraded our PFS line to what we called our Professional series, Professional Write, Professional File. We didn't feel we had enough to go head-to-head with WordPerfect, so we didn't take those guys on—we went after a segment called the manager-professional segment. People who don't write for a living are less demanding of the overall functionality, but want exceptional ease of use.

We then back-filled by inventing more PFS products—First Choice, First Publisher, First Graphics. We were able to create three positions. An upward thrust to generate the exceptional growth that we've had, but also not forgetting our basics, like the PFS product—because you never know, suppose the high-end stuff didn't work, you'd have no position to retreat to.

With those things going we also committed to a high level of fixed costs. We've been a very variable-costs focused company—we want to be able to control our costs. We said that in order to be successful at the high end, we needed a dedicated sales force. So we fired our manufacturer's reps, and built, person-by-person, what today is over a hundred-person sales organization. They have to get paid, so that was a big increase in fixed costs, having to fund that payroll. But lo and behold, with the right products, they've been able to accelerate our growth even beyond what the products were able to do on their own.

Do they deal with distributors, or with corporate accounts?

Originally, it was all one sales force. Today we have two—a channel sales force and a major accounts sales force. The channel sales force has within it two pieces—one that calls on the distributors, and a second tier that calls on retail and does the hand-to-hand combat of point-of-sale, spiffs, training, all the things that have to be done at the actual store level.

The second sales force calls on the Kodaks, the 3Ms, the General Motors, the Fords, the NASAs, and convinces them to standardize on Professional Write or Harvard Graphics, or First Choice for their laptop sales force. They win the standards, but the customer actually places the order through retail. We model ourselves after the success of Compaq—we believe the channel is a partner, and we don't take orders direct.

So essentially the corporate sales force is an evangelism team.

Yes. It is. But because the channel reports to us by ZIP code where they ship things, we know how to do commission and quota crediting for these people. It's a missionary sell, but the results of that missionary work are tracked, and therefore we feel that we can create an incentive scheme that's meaningful for those corporate evangelists.

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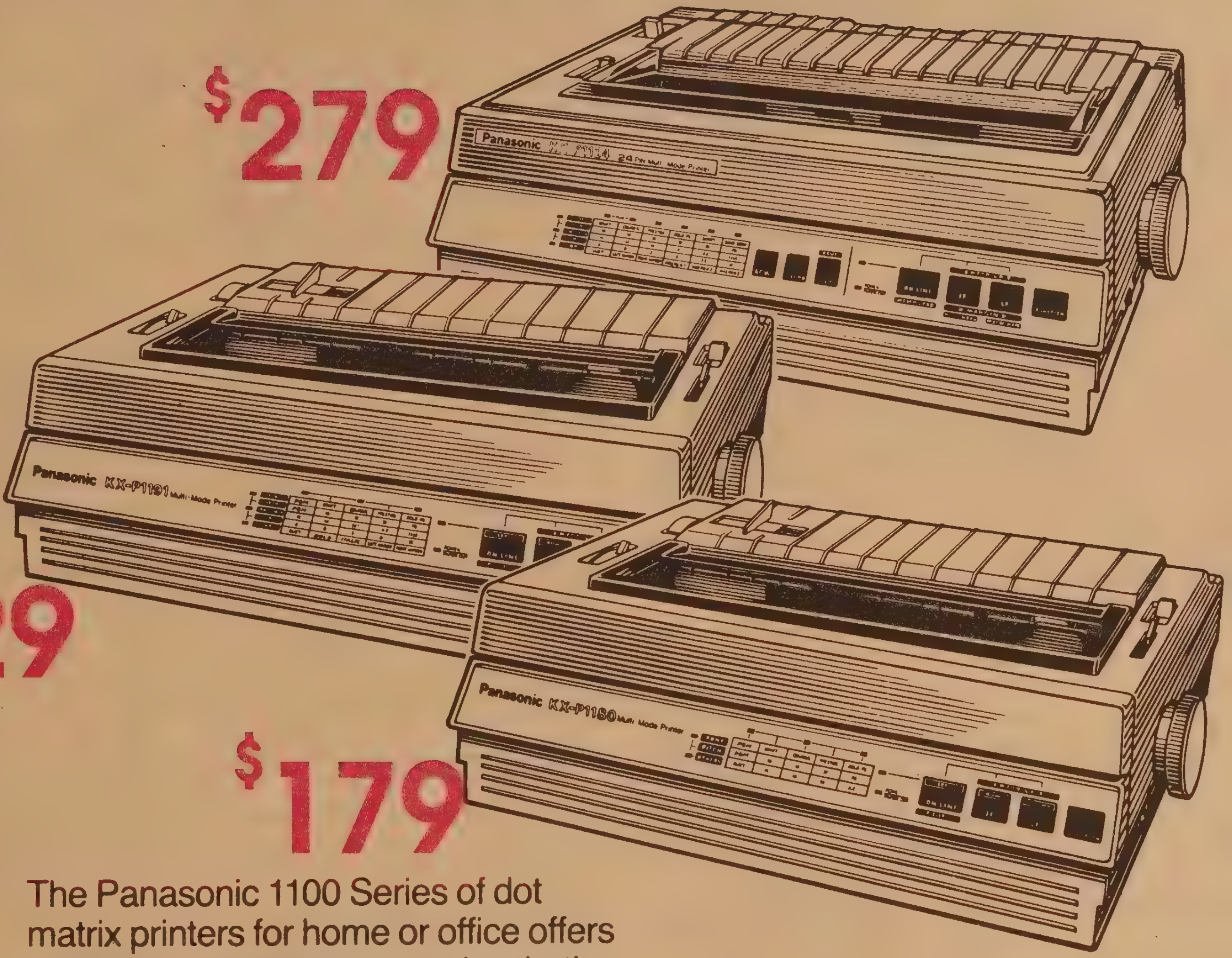
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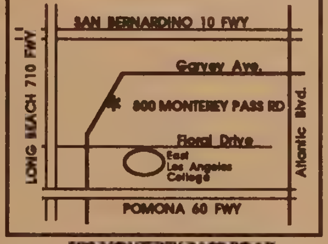

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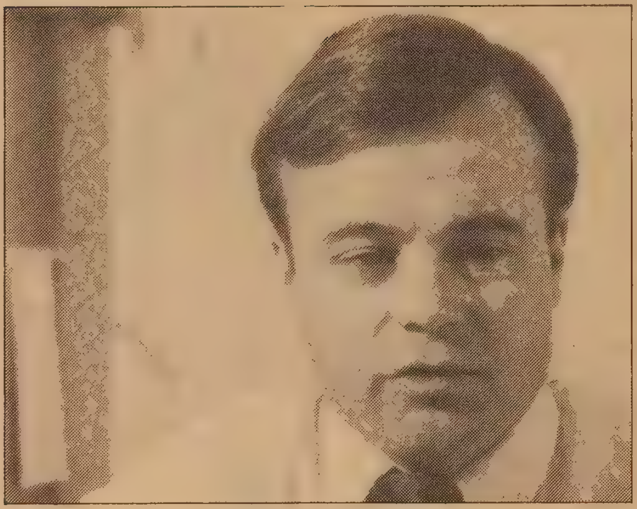

"Alan Kay at Apple says the best way to predict the future is to make it happen. I'd like to predict a future of standards. I think standards like the PC standard have enormous benefits for the consumer."

What are your product strengths from a corporate viewpoint?

You always have to win the product war. You have to have the best of breed. We have the best of breed graphics product; we have the best of breed low-end integrated package, First Choice; we have the best of breed managerial word processor with Professional Write. You've got to win that first—these are competitions, and they've got six or eight choices, and you've got to win the product battle first. That's probably 70% of the war.

Then you have to be able to convince them you've got a strategy for the future—what are your plans to grow and move this product forward? You then have to convince them that you're credible in terms of support and follow-up services.

Your product line seems to be very Intel-intensive—mostly DOS with OS/2 in the works, and very little Mac stuff. I don't see any UNIX at all. What's behind the decision to focus on those particular architectures?

Alan Kay at Apple says the best way to predict the future is to make it happen. I'd like to predict a future of standards. I think standards like the PC standard have enormous benefits for the consumer. You get ravenous price-performance competition among Compaq, Toshiba, IBM, Epson, NEC, Hewlett-Packard, Tandy—tremendous guys beating each other's brains out, as a result of which you get incredible price-performance acceleration of value for the customer.

I believed in that. I'd like to see the industry return to standards—right now they're kind of fragmented among UNIX, Windows, Mac, OS/2, DOS. It causes us problems, because we have to design products for all those different platforms, and they're not the same, and it's not easy to port between them, no matter what anybody says.

From a consumer-advocate viewpoint, I'm an advocate of standards. I think it's healthy for the industry, healthy for the customer. From a pragmatic make-money viewpoint, I'd like to minimize the number of platforms I have to design for. Therefore you're seeing that philosophy and pragmatism applied to our R&D investment. We're a DOS company. We're investing in what is the next generation, the follow-on product after DOS, which is OS/2. We're respectful of the marketplace's desire to run graphical user interfaces on its existing platform—that's what creates the demand for Windows. We're trying to plan for how we can accommodate that need and port our stuff to Windows.

We've all seen the interest in Mac, and we're trying to invest in technology that would allow us to convert our products to Mac as well.

So we're trying to do it. We're trying to meet the customer's demands for multiple platforms. But I won't do it at the sacrifice of being best of breed for a given architecture. I've got to do that, because history says that's how you win. And how you lose is trying to be all things to all people, and being a mediocre breed.

How would you compare your company to Microsoft, Lotus, Ashton-Tate, or, as you mentioned, WordPerfect, all of whom are heavies in the corporate marketplace?

We compete with every one of those companies one way or another. We compete with Lotus—their product Freelance competes with Harvard Graphics. We compete with Microsoft with our product First Choice, against their product Works. We compete with WordPerfect, albeit in a segmented way, with Professional Write, and also I understand they now have a graphics product. Ashton-Tate is kind of off the radar screen; they're a hardcore database company. They have some peripheral lines that have competed with us in the past, but they have basically exited from those product categories.

There are gambles being placed on the future. I think Microsoft is gambling on being a full-suite supplier, an integrated set of office productivity tools. I think that Lotus is gambling on the spreadsheet being the central model for office automation.

We take a much different viewpoint—the difference may be subtle, but it is in fact real. We want to supply information services to end users. Let me be specific—we want you, the user, to be able to access and present information. We want you, the end user, to get data out of a database, see it on a screen in a way that's meaningful to you, whether that be in a form, a document, a chart or a graph. We want to give you tools that let you communicate that information—a document, a chart or a graph, a form.

Now what we don't want to do is be in the plumbing business. We don't want to be in networking, we don't want to be in database, we don't want to be in email systems. We want to connect to them, but we want to worry about the things end users use. There aren't going to be many winners in the plumbing wars, the operating systems wars—there aren't going to be many winners there, and that's not where we're going. We want to stay focused on end users—we're good at that. We want to stay focused on supplying them with what they need, which is access to information and the ability to present and communicate information. That's our view of that.

We don't think one company's going to supply a suite of applications, because we think the world is still going to look for a best-of-breed product. We think the improved connectivity will allow users to mix and match different apps from different companies.

The industry seems to have come full circle in the last decade, from everything being connected to a mainframe to everything being connected together again with networks and workgroups. Sneaking the mainframe back into the PC-based office, as it were. How does that affect what you do, and what are you doing about it?

Well, what we've had to do is recognize that our business is split. We have two fundamental divisions within Software Publishing—one is a retail products division, focused on individuals and individual productivity tools, typically sold through retail. The support, the packaging, the pricing, all that is focused on that kind of environment. We have a second fundamental division called the corporate products division, focused on the corporate customer, their needs.

So we've recognized and structured the business on this change, and if we focus for a minute on the corporate products division, they're clearly now adding salespeople who are technical support people, they are gearing up their support programs to be much more responsive to the needs of the MIS people; our marketing people do executive briefings on our strategy for the next three to five years. We're trying to staff up to become strategic partners with these customers.

A specific example—we go to Kodak, and I sit down with the MIS director, and he says, "If you want to be our supplier of graphics software for the next three to five years, these are the features you've got to have. This is the connectivity you've got to have. We will commit to buy from you if you will do these things." So what they're saying is, they're not going to invent the product in-house, they're looking for someone who'll meet their needs. They define their needs and say, "If you meet them, you can be our supplier." That's what I mean by a strategic relationship. It's very pragmatic. We build what the

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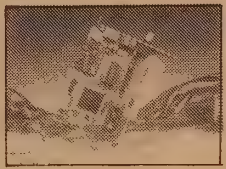

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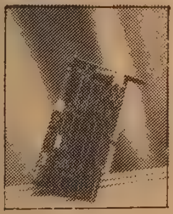

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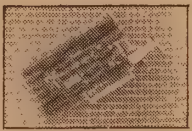

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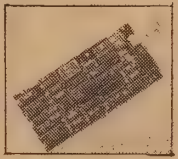

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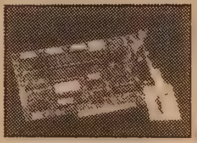

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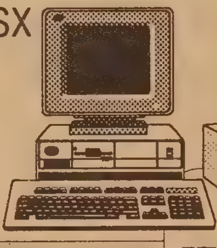

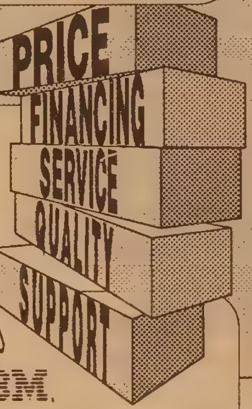

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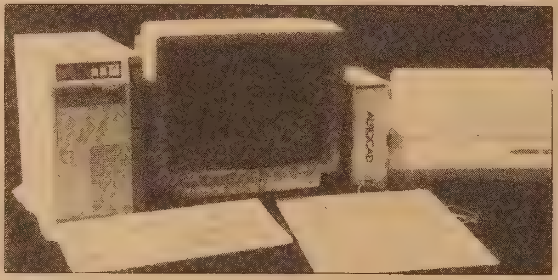

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customer asks us for, and he in return agrees to buy it from us.

We're becoming mainstream and mission-critical to MIS. And we'd better be prepared to understand what responsibilities we need to shoulder to be credible in doing that.

In terms of other hardware and software companies, though, your wagon is not particularly hitched to anybody else's—except maybe Intel's—in terms of strategic partnerships?

Our strategic partnerships are customer relationships, as opposed to coworkers in the industry. That's a world, I think, that often produces very few results. I don't have time to waste motion. We're a $100+ million company with 554 employees.

I notice that you have a significant presence in Europe.

It's growing. The most recent quarter was 23% of our sales. It should be 30 or 40, but we've now got the right guy to do it and so it's happening.

Do you think the impending changes in 1992 are something you need to address?

Very definitely. I was over in England recently and I saw a very real and wonderful thing. We are a very efficient company. We pride ourselves on having the lowest cost of goods sold in the industry, low inventories, low receivables, whatever. Our bent is toward efficiency and productivity.

I saw that we can change the game over there. In the past, you had to put a warehouse in each country, sales and marketing in each country, support in each country. Very expensive, very slow, very time-consuming.

We think we can be very centralized because of 1992 and because of changes in the East bloc. To be specific, we think that next year we'll be able to have one 800 number for support for all of Europe. I'm not being facetious when I say that there'll be three phones, a green one, a white one, and a red one.

By language?

The green one rings, you pick it up and speak French. The red one rings, you pick it up and speak Spanish. The white one rings, you pick it up and speak German. The customer will never know that it's centralized

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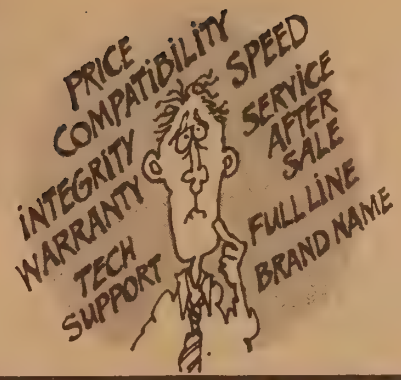

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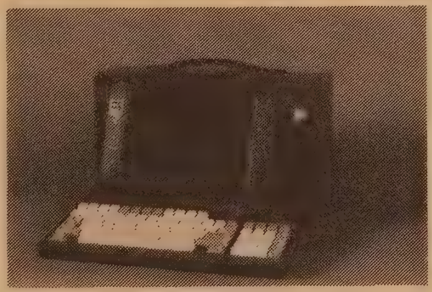

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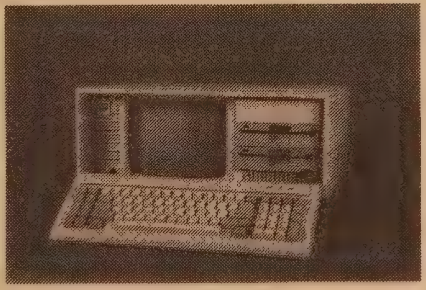

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(256) DOS TUTORIAL V4.4 - Learn DOS easily.
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(816) SLIMMER V2.0 - Nutrition and dieting program.
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(166) ASTRO V2.06 - Great astrology. Req: 400K, 2 drives.
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You have manufacturing over there as well?

Right now it's all manufactured in the US, but we have a warehouse there. We expect to ship manufacturing there as well within the next 12 months.

What do you see as the big challenges ahead?

Well, we have a very successful $100+ million company. That was a milestone, getting this far. I see the opportunity to be a multi-hundred-million-dollar company. It's there.

Software will continue to take more and more of the technology dollar in the next decade. Therefore there's ample opportunity to grow. We must build a company that can grow. That means putting the right managers in place at the executive level, it means putting the right training programs in place for existing managers, it means the right recruiting programs. That means building the infrastructure that can handle growth. It also means putting in place the strategic process that can direct and guide the company toward new markets, rather than just being a hits product company.

So I think building an organization, a structure, and a strategic planning process are very fundamental things that we've got to do that we have not done formally before. If you will, it's going from adolescence to adulthood.

Always an awkward transition.

It is. Companies can accelerate right through them, like a Sun or an Apple, or a Lotus or a Microsoft, but I argue that they've always got to go back and develop those things, it's only a question of when. It's not a question of if.

What about Japan?

They have come to us on several occasions and asked us to do joint ventures with them, to convert our products to Japanese. I don't want to help 'em. I don't help create a competitor downstream, so I've had mixed emotions about working with them on a joint-venture basis.

As far as the Japanese domestic market goes, it's not so big that we have to be there. It's a good market, but not particularly compelling right now. Not something I have to do to be successful.

I haven't put into perspective their potential as a competitor. I don't see a reason why they couldn't be viewed as a competitor someday; I'm not aware of it so far. I think we should take them seriously as a potential competitor and see what happens.

Are you at all disappointed in the relatively slow adoption of OS/2?

Oh, I'm disappointed, but I'm also a realist. The Macintosh looked pretty grim for the first couple of years too. When you put that in perspective—it was 1984-86 when people said the Macintosh was dead because there was no software for it. No spreadsheet, things like that.

I also know that history has rewarded very handsomely those who were willing to take a risk—Aldus with PageMaker on the Macintosh, Microsoft with its position on the Macintosh, they took a risk on a platform. Some of the Windows companies have done pretty well.

Everyone takes some risk—you don't get ahead by taking the safe bet all the time. You want to be best of breed, and you want to be there in the first wave of companies, because once standards get set it's almost impossible to break them.

So you take a risk. I'm not that concerned or disappointed. It is what it is.

What do you think are the main things interfering with its being more widely adopted?

Well, we haven't shown 'em why. We haven't shown 'em the applications to justify it. It's just taken us a couple of years to build 'em—these are multi-megabyte applications, they're huge. Hundreds of thousands of lines of code. We never really sized how big they were going to be, and so we just got into a two-plus year development cycle. Let's see whether history proves it was worth it. I believe it will.

From a user standpoint, it's still essentially a vaporware project, but the developer community keeps saying it's not time to write it off.

No. It's too soon to do that.

One developer told me that it's already quite entrenched in environments where they expect the MIS department to write all the applications anyway.

I think that's probably right. We've seen it as the applications development platform of choice in MIS. So yeah, I think the shrink-wrapped software will follow, and it's over the next 12 months that that's going to happen. ■

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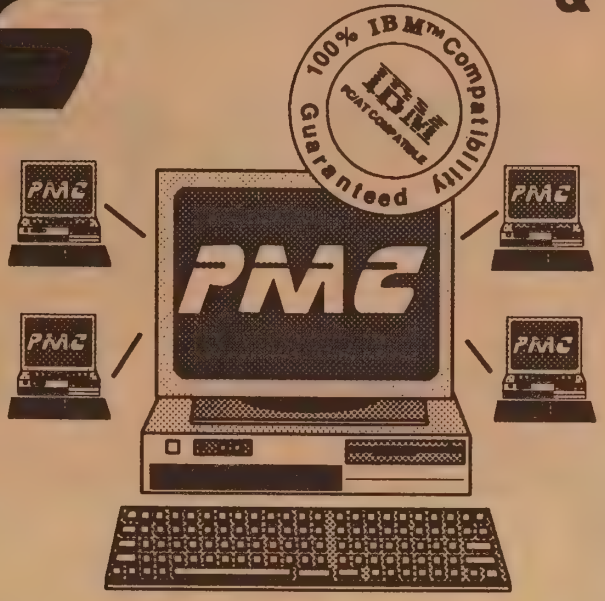

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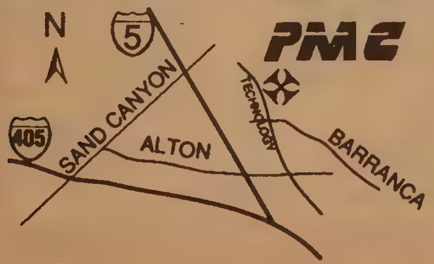

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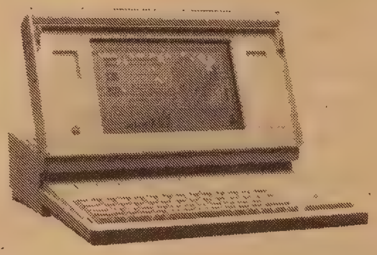

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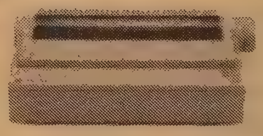

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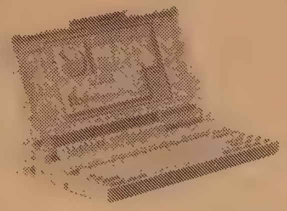

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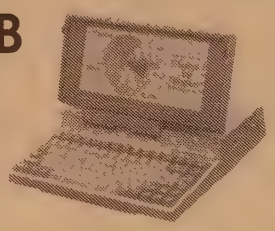

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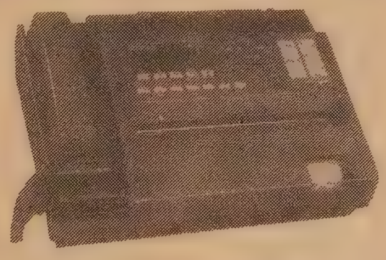

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Object-Oriented Programming Systems, And How They Work

By Birrell Walsh

This season's computer buzzword is "Object-Oriented Programming Systems." Microsoft has committed itself to object-oriented systems for future versions of Windows and Presentation Manager. Apple has settled on C++, an object-oriented version of C, for version 7 of the Macintosh operating system.

So what is all the fuss about, and should you be concerned? If you want to try out an object-oriented language, where do you begin? This month we will take a look at the concepts of object-oriented systems. Next month we will examine some of the languages which use those concepts.

What Are OOPS?

An object-oriented programming system is entirely a convenience for the programmer. It has no hardware speed advantage. In considering an object-based system, you should consider it as a programmer's tool.

The line of development which began in "structured programming" is continued in "object-oriented programming." Data is more hidden, code is re-used more efficiently through inheritance, and similar functions can have identical names. Groups of programmers can work on projects as a team, knowing only the messages to which other objects will respond. They do not need to know how those responses work. Data security and "function security" are enhanced.

Object Systems: Three Characteristics

In a "pure" object system, an object hides information so that you won't accidentally change it or misuse it somewhere else. The information in an object is hidden from outsiders, even from other objects. You can only access it from inside the object. That hiding is called sometimes called "encapsulation."

Encapsulation certainly increases security of information, but it leaves you wondering: How do you *use* the information which is hidden this way? You have the object itself tell you what is inside. Each object not only includes data, it also includes functions which live inside the object but can be called from outside.

If you have an object called "Point," it might have two pieces of data: X and Y, both integers. In that, it is like a record in C or Pascal. But it may also have functions to get the data from outside (perhaps called SetX() and SetY()), and functions to report the values (GetX and GetY). You probably have a function to show the point, and another to hide it.

The original object-oriented programs treated these functions as messages to which the object knew how to respond. You did not just say "SetX(55)," you said "StartingPoint SetX(55)." The object "StartingPoint" would then respond to the message. "StartingPoint Show" would make the StartingPoint's dot appear on the screen; "StartingPoint Hide" would make it disappear.

If you want your data sacrosanct, you can prevent changes by writing no functions which allow it to be changed. If you want it secret, you can write no functions which allow it to be read outside the object. It can still be used by methods internal to the object. Those private functions can handle all the necessary calculations behind a screen of security.

More and more programs are developed by committees. One programmer with an inspired pointer can wreak havoc in another division's code. Objects help a team of programmers to insulate various sections of the program from each other. The programmers can work separately, developing their parts of the program without worrying about unfortunate interactions.

Often you wish you could have a new object which shared all the characteristics of an object you have already created. You might have a Point object, which has X and Y coordinates and functions to change and reveal those values. Now you want a "rectangle" object, which has center coordinates, and also height and width. Do you have to create an object "Rectangle" and give it the X and Y coordinates, SetX() and SetY(), GetX and GetY? No, because objects can "inherit" the characteristics of other objects. You can define a "Rectangle" to be a kind of Point which also has dimensions.

This inheritance can go on for generations. For one application I created a class of objects called "Location" which had X and Y coordinates, and the SetX(), SetY(), GetX and GetY functions. Then I defined "Point" as a class that inherited from "Location," but it could be shown, hidden or moved. "Point" had one more variable inside, too: "Visible," which could be set to true or false—but only by the methods of the "Point" object. That way I could be sure no other function somewhere in the program would tamper with the value.

From "Point" I defined "Rectangle," a kind of point with dimensions. From "Rectangle" I defined other classes of objects, such a moving rectangle called a "Phage" which traveled around the screen and "ate" points. Each class of objects had functions and variables that its ancestors did not.

The line of descent from "Location" through "Point" to "Rectangle" and "Phage" is called a hierarchy. Much of object-oriented programming is a matter of defining your own hierarchies. You re-use the useful parts of simpler objects by making your complex objects their descen-

If you want your data sacrosanct, you can prevent changes by writing no functions which allow it to be changed. If you want it secret, you can write no functions which allow it to be read outside the object.

Books On Object-Oriented Programming

If you want to take a look at Object-Oriented Programming without buying a language, try some of the excellent books which are published on the topic.

I learned about C++ from *The Waite Group's C++ Programming* by John Berry (Howard Sams & Company, $24.95). It is a well-written introduction to the concept of objects, as well as to the standard object-oriented language in software houses. When you are starting with a subject, it is a blessing to read a graceful writer. Mr. Berry is such.

Osborne/McGraw-Hill has released *Using C++* (by Bruce Eckel, $24.95) which covers C++ version 2. It is a good first book on C++, and it explains C++ in the context of other languages.

Another classic in C++ is *The C++ Programming Language*, by Bjarne Stroustrup (Addison-Wesley). Dr. Stroustrup designed and implemented the C++ language at AT&T's Bell Labs. There should be a new version of this as the new definition of C++ settles in.

Andrew Shalit of Apple recommends *Object-Oriented Programming in Common Lisp*, by Sonya E. Keene (Addison Wesley). It explains the new Common Lisp Object System, which will be followed by a number of vendors.

Kurt Schmucker has written an excellent book, *Object-Oriented Programming for the Macintosh* (Hayden Books). It is now three years old, but it remains a very good introduction to objects in the Macintosh environment. It discusses various languages that have been created for the Mac, and tells you the questions you should ask of any object-oriented language.

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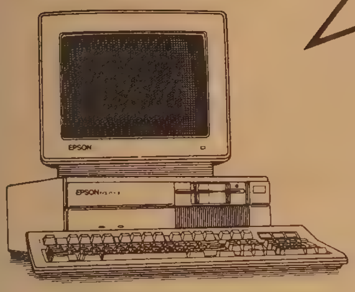

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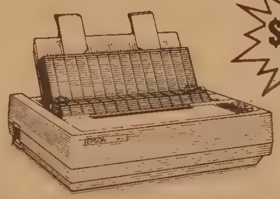

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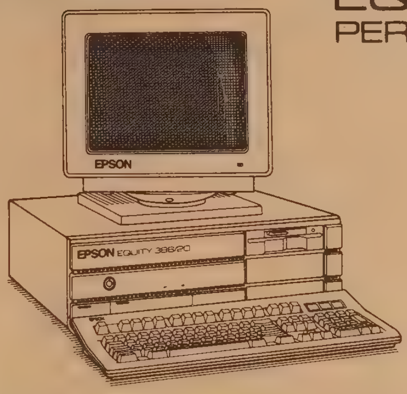

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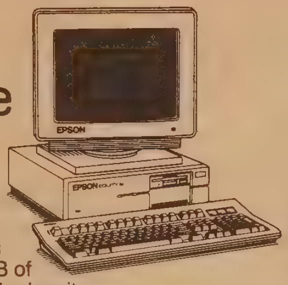

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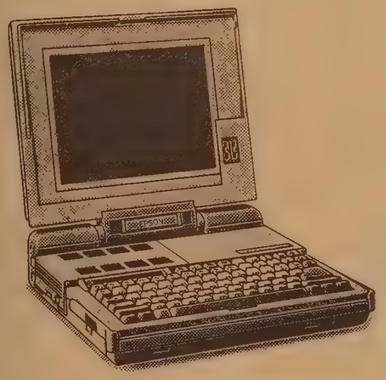

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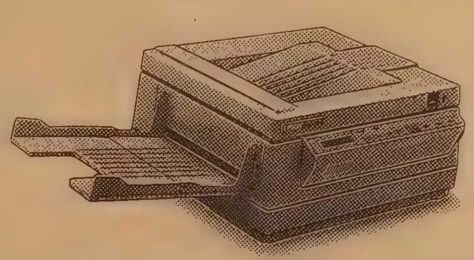

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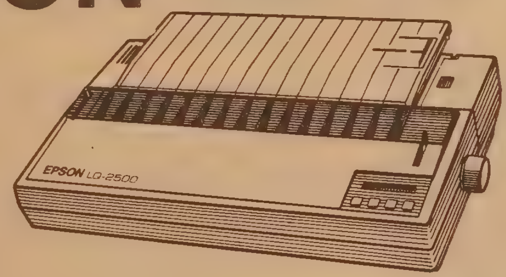

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dants.

You may have thought to yourself, "Wait a minute! The function that shows a Point won't work for a Rectangle. The 'show' function for a Point makes visible only one pixel. The 'show' function for a rectangle has to make a pattern of points visible."

Right you are. We have arrived at the third characteristic of object-oriented programming. The first two are data-hiding and inheritance. The third bears the lovely sobriquet "Polymorphism," which is Greek for "many-shaped-ness." When you send the command "show" to a point, a function is called that paints one dot. When you send the "show" command to a rectangle, a different function is called that paints several rows of dots on top of each other. The name is the same, but the response has many shapes—it's polymorphic. We are used to polymorphism in human language: you get a different response if you say "Duck" in a foxhole than if you say "Duck" in a French restaurant.

You can send a message to an object whose nature you don't know. It might be any of several related objects. If you have defined "Point" and a family of descendants "Rectangle," "Circle" and "Triangle," you can get any of them to paint itself with the command "show." Therefore, you do not need to know as you are programming which kind of object will receive the command. As long as you know that the object belongs to a class which knows how to "show" itself, you can let the issue of just which shape is shown wait until the program runs.

It is possible to design addition functions which add integers, real numbers or complex numbers, and to use the same "+" symbol for all of them. The ability to decide at runtime which function will be used is called "late-binding." Polymorphism makes possible this late-binding.

That is all there is to object-oriented programming: data-hiding, inheritance and polymorphism. How they are implemented gives the different languages their flavors.

The Future Of OOP

Objects are well adapted to inter-machine and parallel applications. In a very few years, we will see distributed objects. A program will generate an object, and send it encoded down the line to another machine. The object will "unfold" in the new environment and work—gathering data, servicing the software it is visiting, or bringing an update. It will function like a benevolent virus. Its task complete, the object will return to its parent machine, or be disposed of by its new host. At the same time, other objects will be working in parallel in as many contexts as are useful.

Objects will also be embedded in mobile hardware. Robots of various sizes will run programs which will be objects in a larger hardware/software system.

Since one object does not know how another functions, maintenance and development can proceed piecemeal. The entire program does not need to go down when one object needs to be rewritten. An object can simply declare itself "unavailable" while it is being updated or maintained. Systems will be able to keep working during repair.

Objects will be able to evolve more rapidly than whole systems. The same strategy was adopted by organic ecosystems: let the parts evolve separately and then interact. Object-oriented programming systems can develop faster than current systems.

There are two negative aspects to object systems, and they will increase in impact: the "object bureaucracy" and the "object zoo."

OOPS can lead to a focus on "interface standards" and "inter-process protocols" that stuns creativity. Object-oriented systems will permit the kind of bureaucratic separation of function that has paralyzed organizations. Objects, like people, will be able to say to each other "Have a seat" and "Not this department."

Secondly, a hierarchy of objects can be confusing. The "taxonomy" of your system will always be its most important design feature, and the place where the most confusion is possible. As objects become able to inherit from multiple parents, the situation will get worse. To prevent chaotic proliferation of object classes—the "object zoo"—programmers will have to exercise a great deal of restraint.

To plan for object-based systems that reach across several kinds of hardware, the OMG has been formed. The Object Management Group includes Gold Hill Computers, Data General, Hewlett-Packard, American Airlines, Canon (who own part of Steve Jobs's NeXT), Sun, Unisys, 3Com, Prime Computer, and Phillips International BV. The standards they set will permeate the industry.

These companies are meeting because they agree that the future belongs to object-oriented systems. Next month we will look at specific languages that use objects: C++, LISP, Smalltalk/v, and two versions of Pascal. ■

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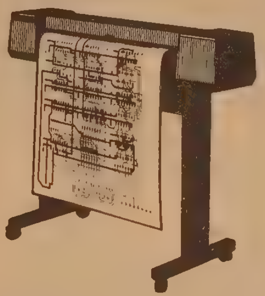

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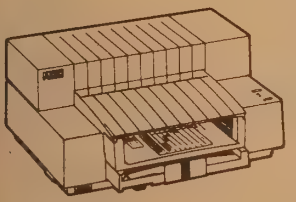

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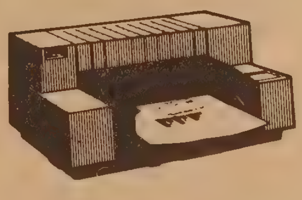

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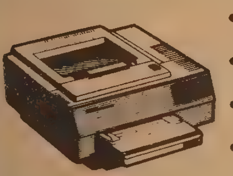

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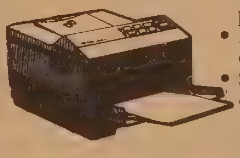

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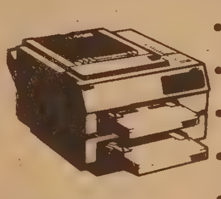

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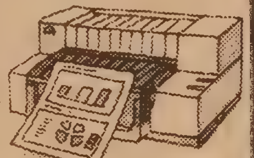

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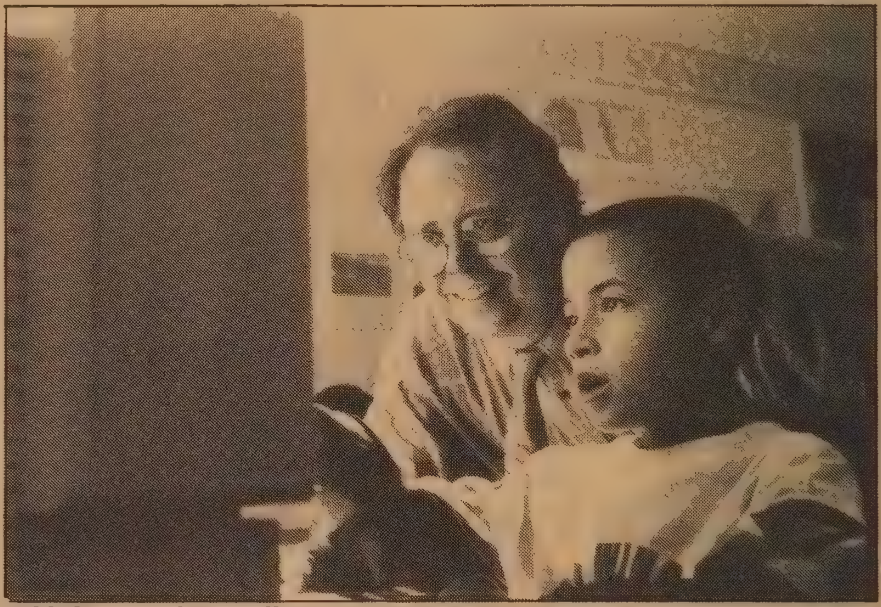
Computers & You

New Center Provides Computer Skills For The Disadvantaged

By Tony Rocco



Publisher David Bunnell joins in computer exploration with a student at Computers & You.

Had magazine publisher David Bunnell not been so intimidated by the prospect of debating Apple's charismatic Jean-Louis Gassée, he might never have discovered the facts that helped propel him to start Computers & You, a pioneering computer learning center for disadvantaged urban kids and adults in San Francisco's seedy Tenderloin district.

To avoid the painful fate of losing to executive Gassée in a formal debate at Stewart Alsop's computer conference a few years ago, Bunnell prepared his argument with extra thoroughness. His assigned position: That personal computer technology is *not* making the world a more democratic place. The former publisher of *PC World* and *Macworld* magazines was shocked by what his research showed him.

"The facts and figures say that the number of computers is far, far greater in suburban schools than in urban schools," Bunnell says. "Middle class kids have access to computers at home and at school. Poorer kids don't. The computer is helping to broaden the gap between the haves and have-nots."

And his audience agreed. Although it wasn't official, Bunnell is sure he won the debate. "Judging from the applause, I won," Bunnell boasts.

Whether you agree with Bunnell's conclusions or not, it would be hard to find fault with what he has done on the sixth floor of Glide Memorial Church. He has helped conceive and create Computers & You, a non-profit computer learning center for disadvantaged urban youths as well as adults who are down on their luck or recovering from drug addiction or alcoholism. Computers & You has received a quarter of a million dollars in donated equipment, books, and software from computer companies including Apple, T/Maker, Borland, Ashton-Tate, Activision, Brøderbund, and Adobe. In addition, many industry notables have given their time to the learning center, including Adobe's John Warnock and Paperback Software's Adam Osborne.

This support demonstrates that the popular belief "that people in the computer industry are not generous, they're not involved, they don't care about anything except making money, building companies, and stuff like that" is not true. "My experience with this program has been exactly the opposite," Bunnell states.

It all started when Bunnell, a longtime Glide patron, and International Data Group's chairman Pat McGovern approached the famed Reverend Cecil Williams in June of 1988 about starting a computer learning center. They found Williams was not only interested in the idea, but the entire sixth floor of his Tenderloin building was available for use.

McGovern, Bunnell, and their respective companies then pitched in $100,000 to get the project started. Bunnell, being well-connected in the microcomputer industry, was successful in getting donations of computer hardware and software as well as texts and instructional manuals. After remodeling the space on the sixth floor and soliciting volunteers to teach classes and help set up and maintain the equipment, Computers & You opened in January 1989.

Today Computers & You teaches about 300 students per quarter the basics of using Macintosh, Apple II, and PC-compatible personal computers. Children and adults who have a demonstrable need can enroll in classes on basic computer literacy, word processing, spreadsheets, desktop publishing, and even MIDI. Bunnell hopes that his learning center is just the start of a national and even international chain of Computers & You's.

"I'd like Computers & You to be a national program. I would like to have another center in East Palo Alto. I would like to see it in every ghetto in America, and eventually in other countries as well. We hopefully can create a program that has a proven track record and prove that our students have success and that we're creating productive members of society. One of my hopes is that some day we will be able to say that a president of IBM got his start at Computers & You."

Whether any of tomorrow's industry leaders get their start at Computers & You remains to be seen, but the learning center is definitely having a positive impact on people's lives. Kids who come from troubled homes in which fathers and mothers may be alcoholic or drug addicted are starting as early as age two learning how to use a computer. Among the children attending Glide, the dropout rate is almost zero, Bunnell reports. Dropouts among adult learners are more common, however—about a third of the students.

While teaching computer literacy skills is of prime importance at Computers & You, the program there also addresses the overall needs of the individual. A formerly addicted, homeless, or alcoholic person lacks more than just employable skills; he or she also needs appropriate "soft skills" like how to write a resume, how to present oneself in an interview, how to behave in an office environment, and how to get ahead. While an individual may have been quite skilled at dealing with a street environment, those skills don't transfer to the straight, workaday world.

"To be effective and successful in the office environment, you have to be able to deal with the environment, with people—how to dress right, how to deal with co-workers, how to deal with bosses, how to promote yourself, how to advance. So we want to teach people those skills too. This is much more than computer skills," Bunnell explains.

The next step for Computers & You is to offer adult students a way to get their feet wet in the new world of office employment before being plunged into a full-time job. Once having taught the computer skills needed to find a job, Computers & You will find temporary work for its students through a new agency called Tenderloin Temps. This temporary employment agency is slated for operation sometime later this year, as soon as the money is available.

And money, Bunnell would like it to be known, is what Computers & You is in greatest need of right now. While volunteers and donations have been quite forthcoming, money has been a harder nut to crack.

Say Bunnell, "We basically can get hardware and software donations, we can get volunteers to help us teach. But to make this all work, we have to have a full-time staff. And we have certain expenses we have to meet, and that requires money."

Plans are in the works to get corporations to sponsor students at a cost of $5,000 a year. "For $5,000 you can sponsor a student for a whole year and pay for all their classes and all the support. You get reports on how they're doing, and hopefully companies will get really involved with some students to the point where they might even hire them and have them work part-time. We think that that's a really good way to get companies to feel that their money is being used well and that they're being a participant in something very constructive."

If you or your company would like to help improve the lives of disadvantaged children and adults with a donation of time, equipment, or money, contact David Autor, Computers & You, 330 Ellis St., San Francisco, CA 94102, (415)922-7593. ■

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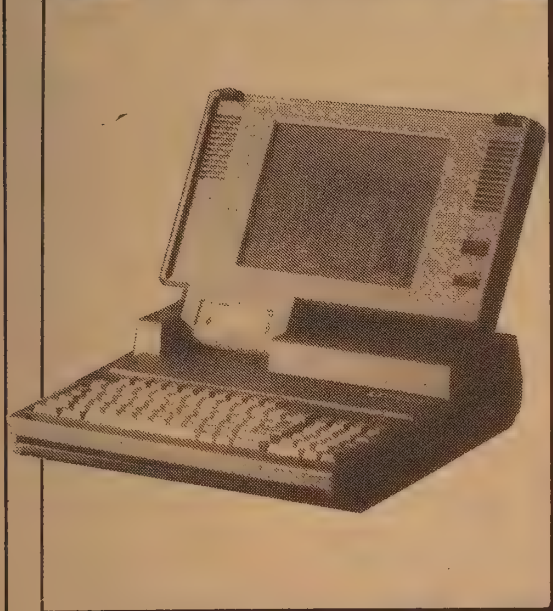

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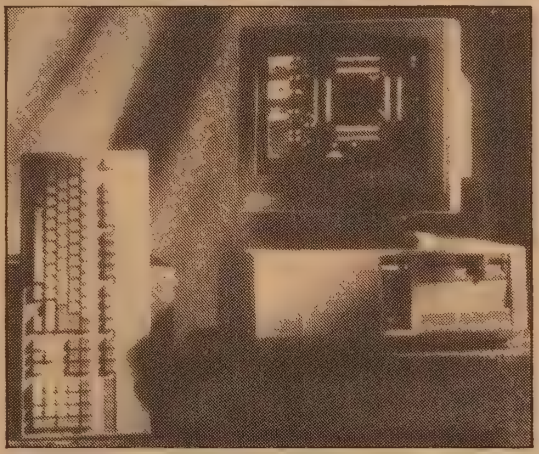

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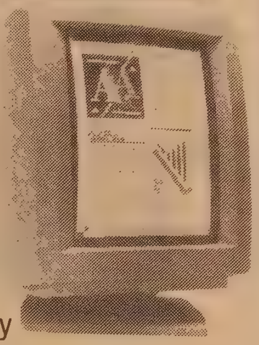

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Bringing Your Mac Plus Up To Speed

Instead of trading in your Plus on a new machine, you can add an accelerator board to maximize its performance—in some cases, beyond that of an SE/30

By Matthew Leeds

You say you're tired of watching that IIci running rings around your Plus? Tired of taking coffee breaks while waiting for your Excel spreadsheets to recalculate? Tired of doing your nails while the screen redraws in Illustrator?

A stock Macintosh Plus has some severe performance problems when compared to the current crop of machines. The 128 K ROMs, slow CPU speed, even slower SCSI transfer rate, and lack of a math coprocessor all contribute to keeping the Plus's performance lackluster. Instead of trading in your Plus on a new machine, you can add an accelerator board to maximize its performance, in some cases beyond that of an SE/30.

Accelerator manufacturers use a variety of strategies when designing their products. Each approach has its benefits and its drawbacks; the ultimate decision is up to you.

The Fast 68000 Approach

The simplest approach is to use a 16 MHz 68000 CPU in place of the stock 8 MHz 68000 in the Plus. Since the CPU is running at roughly double speed, you might assume that performance is doubled. This is not always the case, but in general is about what you can expect with some applications.

Running at twice the speed does require some additional changes. The speed of the memory chips on most Pluses is 150 ns (nanoseconds). Replacing the stock 68000 with a 16 MHz unit requires setting a wait state, or replacing the 150 ns memory with 120 ns or better (see below).

The latter option has some advantages. Wait states degrade the performance of any machine. Besides, when buying extra memory it's good to plan ahead. The Mac II family, as it continues to use faster CPUs, will require 100 ns and even 80 ns memory. If you are considering an eventual upgrade to a Mac IIcx or IIci, keep in mind the ns rating of the memory you buy.

Generally, with an accelerator for the Plus, you need to place memory on the board. This normally requires using low profile parts (SOJ, otherwise known as surface mount) instead of high profile DIPs. Clearance inside the Plus is tight.

Remember—adding an accelerator card may preclude or conflict with other cards you already

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16 MHz 286 0 WAIT

(SI=18.7) EXCELLENT HIGH SPEED

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- 230W (110/220V) P/S
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- Hercules Comp. Graphic
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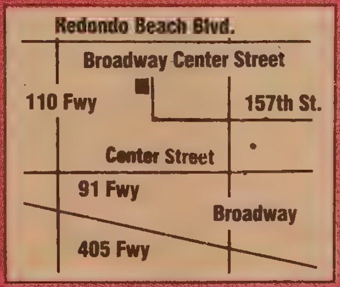

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have or may want to add to your Plus. Also, some accelerators can only be populated with one megabyte or 4 Mb of memory; the 2.5 Mb intermediate expansion is not supported.

The Siclone board ships with two 32 K SIMMs that can be used on the motherboard in place of the memory currently there. The Plus usually requires a minimum amount of memory on the motherboard for video and sound buffers. The Siclone approach lets you use the memory currently on the motherboard on the accelerator, and access it at the higher clock speed.

All accelerator products offer a math coprocessor socket, supporting the 68881 and/or 68882 FPU (floating point unit). In all but one instance the FPU runs at the same speed as the CPU. The 68000 does not provide direct support for an FPU, so each manufacturer has to provide code, usually in the form of an INIT, that intercepts system calls for floating point math and redirects them to the FPU. Generally this code also includes a rewrite of the SANE math routines in the Macintosh's operating system.

The 32-Bit Options

A different approach is to use either the 68020 or 68030 CPUs. These are capable of executing instructions at least twice as fast as a 68000; they also provide direct support for an FPU and come in speeds in excess of 25 MHz. The speed gains come in part from the clock speed, but also from the fact that the 68020/30s can address memory in 32 bit words instead of the 16 bit words of the 68000.

They also contain memory caches inside the CPU. These store data and program code. If a program executes the same loop over and over, or if it operates on the same data in a loop, the cache allows the CPU to avoid having to read data or instructions from memory. This saves clock cycles, and speeds up program execution.

For your Plus to address memory as 32 bit, the memory must be on the accelerator board, and generally it must be faster than the 150 ns memory the Plus normally comes with. If you use the 150 ns memory, you will need to set wait states, losing some of the potential speed improvement the accelerator offers.

In evaluating the relative costs and benefits of accelerator products, you should take into account the cost of memory you'll need to get the most from them.

Two products listed in this article use a static RAM cache. This is a very high speed RAM cache, similar to the on-board caches of the 68020/30 chips. These do not allow for additional memory to be placed on the accelerator, but they also do not require the use of faster RAM.

Another technique for speed improvements is to remap the 16 bit Macintosh ROMs into the faster memory on the accelerators; either the 32 bit memory or the 32 bit static RAM cache.

In evaluating the relative costs and benefits of accelerator products, you should take into account the cost of memory you'll need to get the most from them.

All of the 68020/30 accelerators come with software that lets you control the CPU caches (needed to run self-modifying code—a no-no, but some programs still do it), custom SANE INITs, and some offer other utilities like ROM to RAM remapping, SCSI formatters (see below), and hard drive management tools.

The Plus has a slow SCSI hard drive data transfer rate of 265 megabytes/second, far slower than the rest of the Macintosh family. This is due in part to

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List Price 16 MHz version	$795 w/fan	$599 need fan	$895; $149 fan	$696 w/fan	$1195 w/fan	$1425 w/fan
Speed CPU in MHz	16 68020	12 68020	16 to 25 68020/30	16 68000	16 to 25 68020/30	16 68020
Speed FPU in MHz	16 68881 $300	16 68882 $300	16 68881 $300	16 68881 $399	16 68881 $300	16 68881 $249
Ram cache	32 K static included	256 K static $699	n/a	ROMs on board	n/a	n/a
Expandable	no	just cache	yes	yes	yes	yes
Increments	n/a	n/a	4-256 K or 4-1 Mb SIMMS	1 Mb 2.5 Mb 4 Mb same as Plus	4-256 K or 4-1 Mb SIMMS	4-256 K or 4-1 Mb SIMMS
Ram speed	n/a	n/a	80 ns or + for 16 MHz	120 ns 150 ns 1ws	100 ns or + for 16 MHz	120 ns or + for 16 MHz
SANE Init	yes	yes	yes	yes	yes	yes
Wait states	n/a	n/a	at 80 ns none	at 120 ns none	at 100 ns none	150 ns 2 ws 120 ns 1ws
Map ROM to RAM	via cache	coming	yes	n/a	yes	yes
Main memory used	yes	yes	yes 1 or 4 Mb	shipped w/ 64 K of SIMMS for video and sound	yes 1 Mb only as 16-bit 2 ws	not needed
Display support	Full Page	none	MegaGraphic	none	E-Machine MegaGraphic	variety
Hard drive conflicts	some; allows 1:1 interleave	none	some with removable; allows 2:1 with own SCSI	some; allows 1:1 with own SCSI	allows 1:1 with own SCSI	unknown
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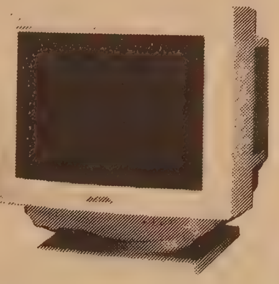

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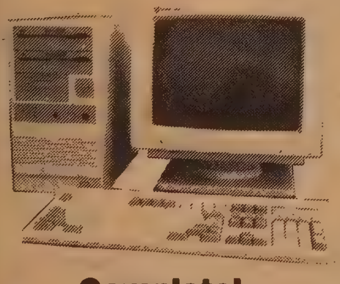

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the slow processing speed of the CPU, and in part to the 128 K ROMs.

Many hard drives used with a Plus are set to a 3:1 interleave, intentionally slowing down the data transfer rate of the drive. Adding an accelerator improves the hard drive transfer rate of the Plus. Many of the accelerator cards have their own SCSI port. This improved performance has one drawback: you'll need to reformat your hard drive to a 2:1 or 1:1 interleave to take full advantage of the performance gain.

All but one of the accelerators offer some support for large screen displays. Most offer a connector that works with a third-party display, while the PROboard has extended display support built-in.

Important Considerations

The extra circuitry on the board and its effect on air circulation inside the Plus makes adding a fan mandatory. Most of the accelerators come with a fan; a few require you to purchase your own. Some also use a fair amount of power, and these either include or offer a power supply modification kit. Installation is not recommended for the faint at heart in any case, and a few manufacturers require dealer installation.

A short word about the installation process. Most of these products use a clip that attaches over the 68000 installed in the Plus. If you move your Mac from place to place often, this clip may come loose. Some manufacturers offer a "pin-modification" option, where pins are soldered onto the 68000 to allow direct attachment of the board. This is not a recommended end user procedure, but may be something you want to have done to ensure trouble-free use of an accelerator.

For some the bottom line is performance. Generally there are three tiers of improvement. The first level is offered by adding a 16 MHz 68000, the second by using a 68020 with a RAM cache, and the third by using a 68020/30 with 32 bit RAM on the accelerator. If you want numbers, then here are some rough estimates of improvements over vanilla Plus performance, based on real world uses, not benchmarks of math intensive programs.

16 MHz 68000	68020 w/cache	68020 w/32 bit	68030 w/32 bit
68881	68881	68882	
150%	225%	350%	4-500%

What's For You?

Now to put all of this in perspective.

If you're planning on buying an accelerator, you should decide whether you're planning on this purchase as an interim measure until the SE/30 or IIx family comes down in price. If this is the case, you can offset the cost of buying fast RAM for the 68020/30-based accelerators, as you will be able to use that memory in newer Macs when you buy one.

Also, if you need the maximum performance from your Plus, one of the 68030 accelerators will give you performance equal to or better than that of an SE/30. If cost is a factor, the Radius accelerator gives the best price/performance, as it requires no additional purchases, and it places well up in the speed improvement range.

You should also consider compatibility with large screen displays. If you already own a large screen display, or have a specific model in mind, check with the manufacturer for the most current compatibility list.

The same applies to hard drives. Some manufacturers (notably Radius) maintain lists of non-compatible hard drives. Get assurances from the suppliers of both the hard drive and the accelerator as to compatibility.

If System 7.0 compatibility is an issue for you, you'll need an accelerator with a 68030.

Finally I've compiled a list of accelerator cards for the Mac Plus. This is not a completely comprehensive list, but I've excluded only the most expensive units. The pricing is current, and is based on manufacturer's list prices. Be careful in comparing prices, as some boards (Radius; Siclone sort-of) include memory while most do not.

If you've expanded the memory on your Plus, you may be able to migrate that memory to the accelerator. Also keep in mind that the Novy and Total Systems boards can use either a 68020 or 68030, and can be upgraded.

The price at the bottom of the list is for a system with CPU, FPU, and fan (I've added $100 for a fan for the MicroTech). It does not include the cost of any additional memory (the MicroTech static RAM is not included in the bottom line). You should keep in mind that the price for FPUs varies from source to source; a little shopping around can save you well over a hundred dollars. Happy speeding. ■

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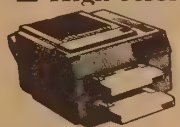

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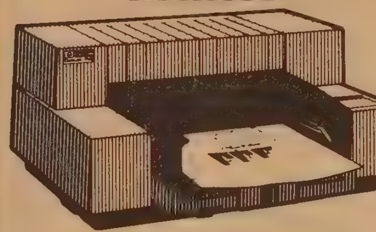

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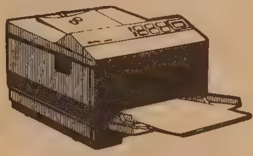

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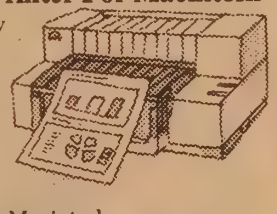

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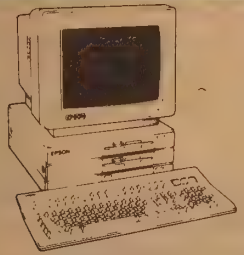

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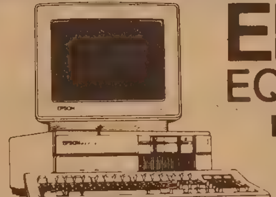

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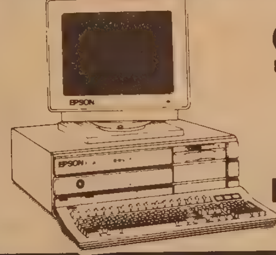

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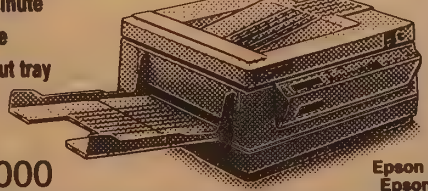

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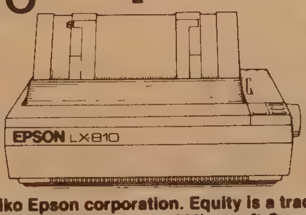

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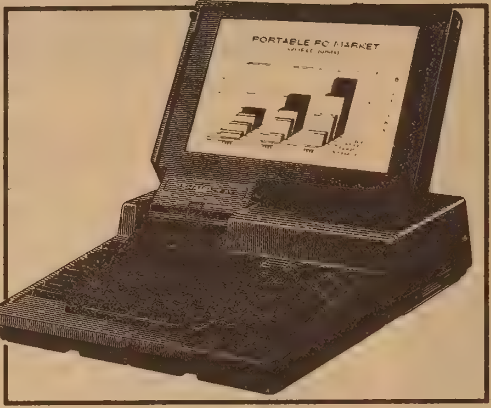

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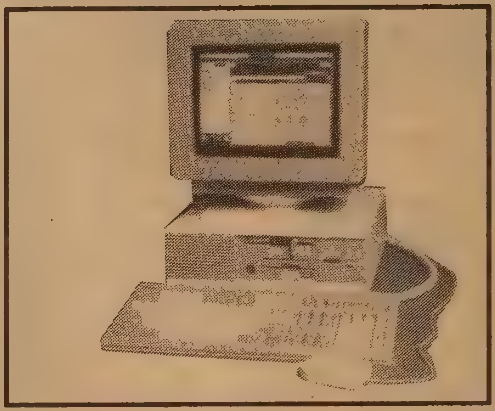

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Adobe Type Manager

Smooth Fonts For The Budget-Minded

By Carol S. Holzberg

Is PostScript envy getting you down? Do you wish you could add character to on-screen displays of your PostScript outline fonts? Do you dream of generating high quality PostScript-like printouts on a Hewlett-Packard DeskWriter or Apple's ImageWriter and LaserWriter SC?

If so, Adobe Type Manager (ATM) may be just the software solution you need. It greatly improves on-screen display, and enables non-PostScript printers (including the 9-pin dot matrix ImageWriter) to output hard copy rivaling snazzy PostScript LaserWriters.

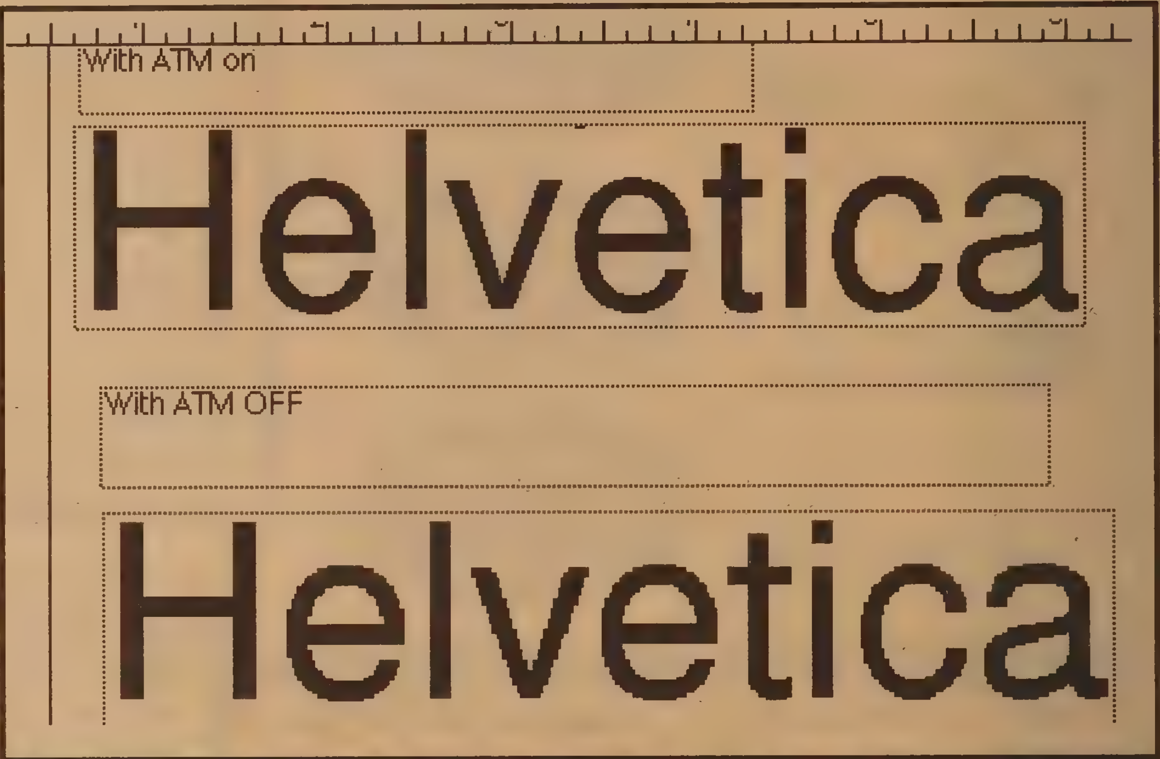
Installation

The ATM package consists of an ATM Control Panel device (CDEV), two versions of the ATM INIT (start up document), 13 outline printer fonts in four font families (Times, Helvetica, Courier and Symbol), and a folder of corresponding bitmapped fonts. ATM users drag the CDEV, one INIT, and printer fonts to the System folder. They run the Font/DA Mover to install the bit-mapped fonts into the System (if these are not already present). If you own a Macintosh Plus or SE, you drag the ATM CDEV and 68000 driver. With an SE/30 or any Macintosh II, you must install the CDEV plus the ATM 68020/30 driver.

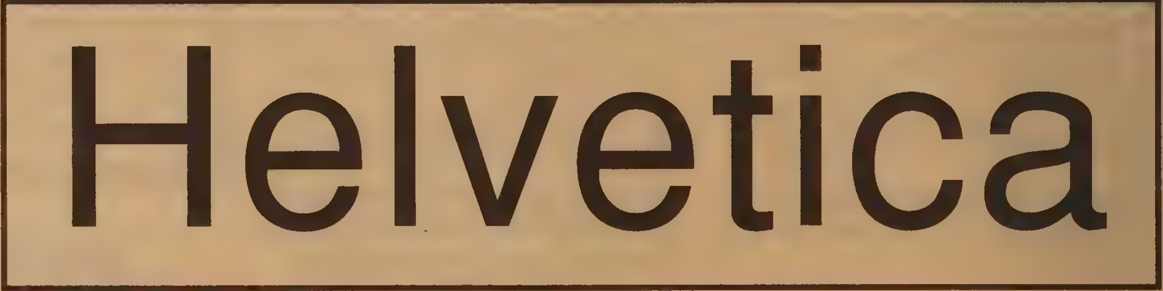
When installation is complete, users should choose Control Panel from the Apple Menu, follow on-screen prompts to personalize their copy of the program, and restart the machine. The ATM Control Panel also provides options for turning ATM on or off, controlling line spacing or character shapes with ATM on, and adjusting the amount of System memory available for font information (font cache). It's necessary to restart the Macintosh any time you make changes in Control Panel settings. You'll be able to tell when the ATM INIT is off at start up because its icon appears on the "Welcome to Macintosh" screen with a bold line drawn through it.

Using ATM

Once installed, ATM operates transparently in the background. It reads Adobe's PostScript Type 1 outline (printer) fonts and bit-mapped screen fonts resident in the System folder to produce vastly



PICT shot (above) of a "before" and "after" rendering of the Helvetica screen font in 96 point type. Notice how the scaled characters are much less ragged when ATM is on. ATM provides the same enhanced output on ImageWriters and other non-PostScript printers. PostScript output is (below) smoother and pricier.



If you're saddled with a non-PostScript printer, ATM offers enhanced computing power for a very reasonable price. Until System 7.0 is released and its bugs are worked out, ATM is the only way to go.

Carol S. Holzberg, Ph.D, Shutesbury, Massachusetts is a computer journalist who writes and consults on a variety of computer-related topics. She is currently saving for a top-of-the-line Macintosh IIci.

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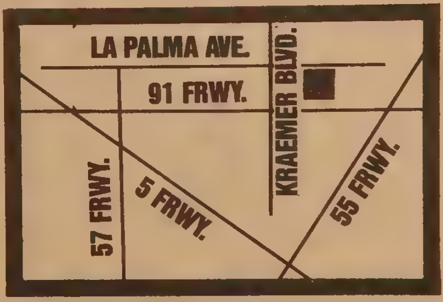

> **ATM operates quickly on any Mac equipped with a single megabyte of RAM. This minimal memory configuration is good news for all Mac users who worry about compatibility with Apple's "Royal" outline font technology, slated for release with System 7.0.**

improved display images of PostScript typefaces. It generates high-quality, smoothed screen bitmaps in any size that you specify, even if the particular point sizes you request are not in the System file.

The difference between QuickDraw bitmaps and ATM's outline printer font display is particularly noticeable at large-point sizes. There are no more scraggy or uneven letters. On-screen text closely resembles printed output. However, with fonts in 12-point size or less, the display quality is not as smooth. Those conventional display jaggies still may appear.

Adobe Type Manager ships with disk versions of only 13 fonts resident in the LaserWriter II NT/NTX. Adobe Type Manager's companion font package, ATM Plus Pack, offers an additional 22 PostScript outline fonts in seven popular font families (Palatino, ITC Bookman, ITC Avant Garde, New Century Schoolbook, ITC Zapf Chancery Medium Italic, ITC Zapf Dingbats, and Helvetica Narrow). The Plus Pack selection completes the set of 35 outline fonts resident in the LaserWriter II NT/NTX.

Getting ATM to work with any Plus Pack font is an easy task. Simply drag the desired outline fonts into your System folder, activate the Font/DA mover to install the corresponding bitmapped fonts, and restart the Mac. You should install bitmapped fonts in as many point sizes and styles as room allows. At a minimum, make sure you've selected roman (plain) font in 10- and 12-point sizes. Suitcase II or Master Juggler users can place outline fonts in a separate folder with any open suitcase. Both ATM and the ATM Plus Pack offer quick reference character set charts showing Option and Shift-Option Key Caps, plus composite and extra characters.

ATM operates quickly on any Mac equipped with a single megabyte of RAM. This minimal memory configuration is good news for all Mac users who worry about compatibility with Apple's "Royal" outline font technology, slated for release with System 7.0. Apple's new System software will require 2 Mb to operate. When it ships, it's not expected to support the variety of Type 1 printer fonts currently available. ATM, on the other hand, provides users with scalable font options now, without requiring them to purchase additional hardware.

ATM is a nifty utility for all those who work Type 1 fonts on non-PostScript printers. The current version supports neither PostScript graphics nor the Type 3 PostScript fonts generated by programs like Altsys's Fontographer. But if you're saddled with a non-PostScript printer and you're committed to using the variety of Adobe's Type 1 outline fonts, ATM offers enhanced computing power for a very reasonable price. System 7.0 may provide users with new options that make ATM redundant or obsolete. But until System 7.0 is released and its bugs are worked out, ATM is presently the only way to go! ■

SYSTEM REQUIREMENTS: Macintosh Plus or later, 1 Mb RAM; hard disk or two floppy-disk drives; System 6.02 or later; Font/DA Mover 3.8 or later; ImageWriter (I, II, LQ), LaserWriter IISC, Hewlett-Packard DeskWriter, or Adobe PostScript printer.

COMPANY: Adobe Systems Inc., 1585 Charleston Road, Mountain View, CA 94039-7900; (800)83-FONTS or (415)961-4400

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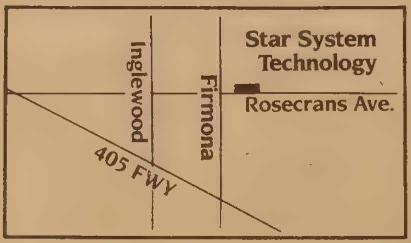

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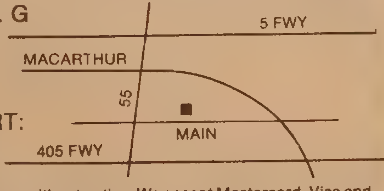

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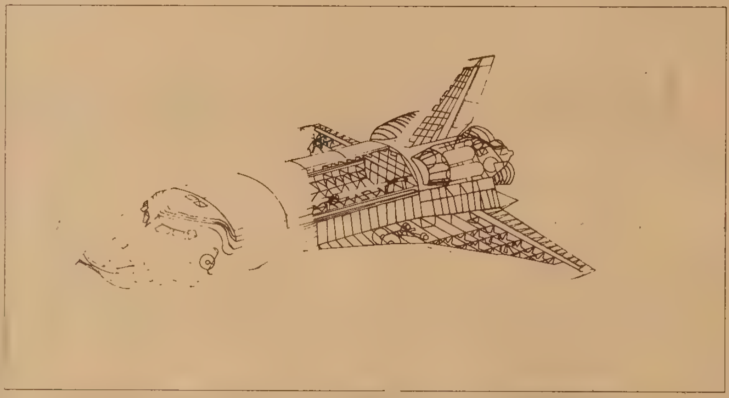

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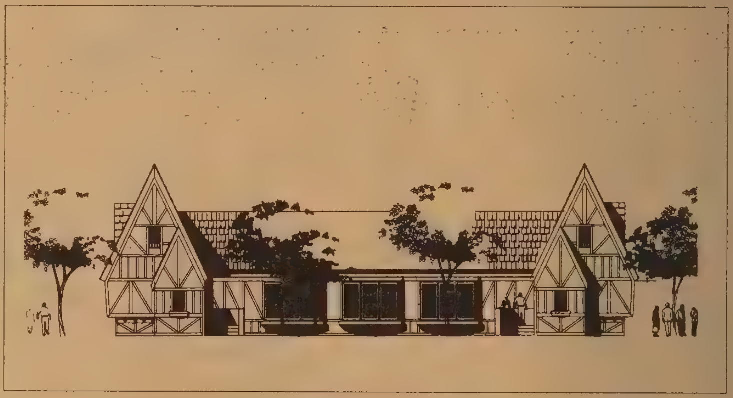

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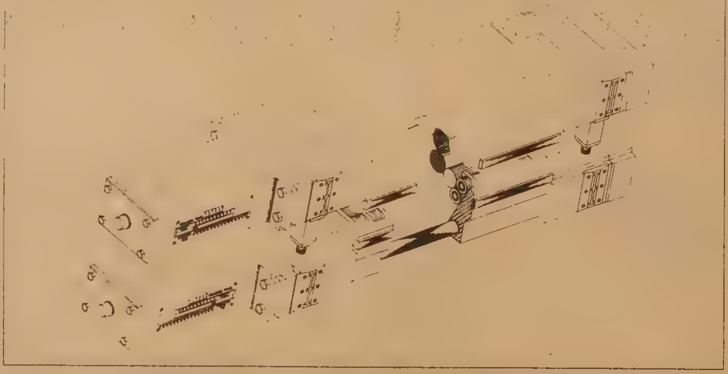

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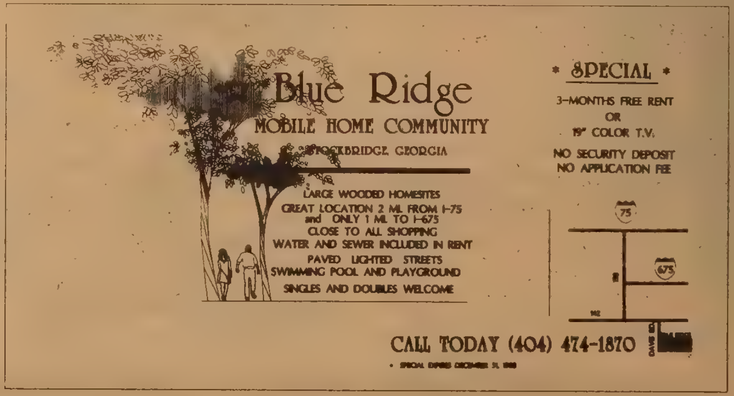

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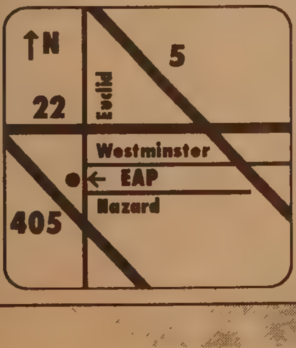

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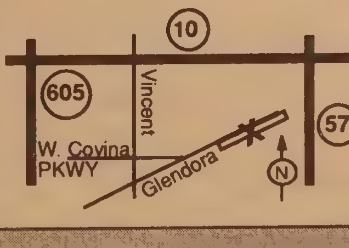

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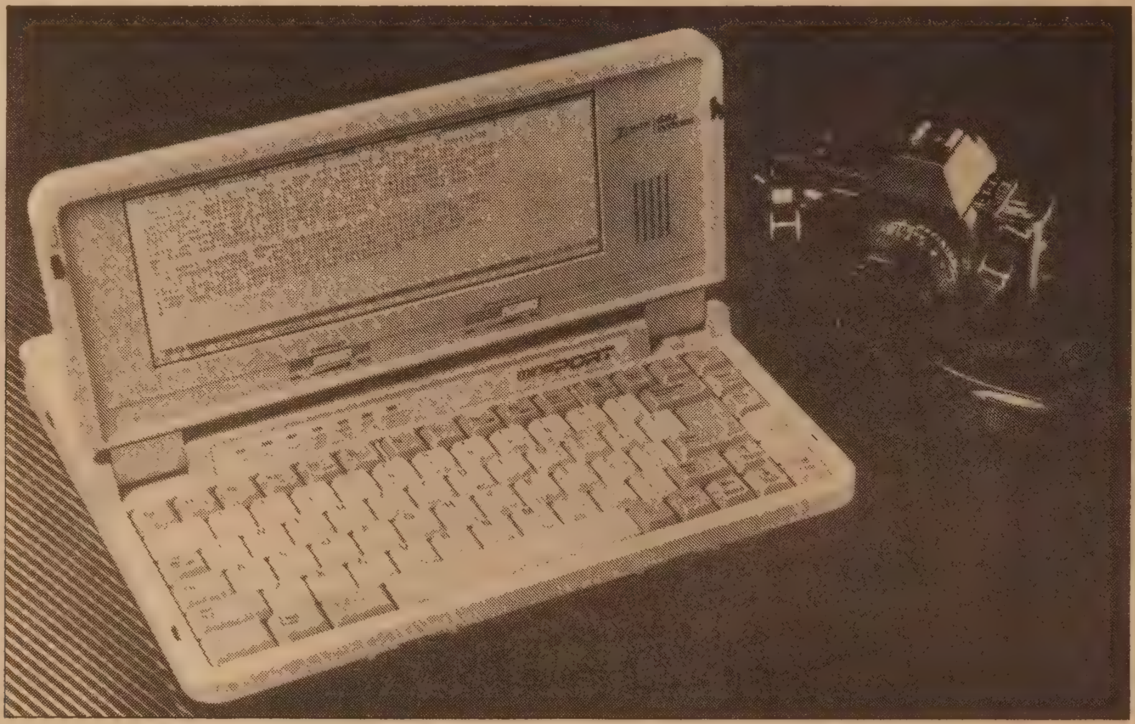

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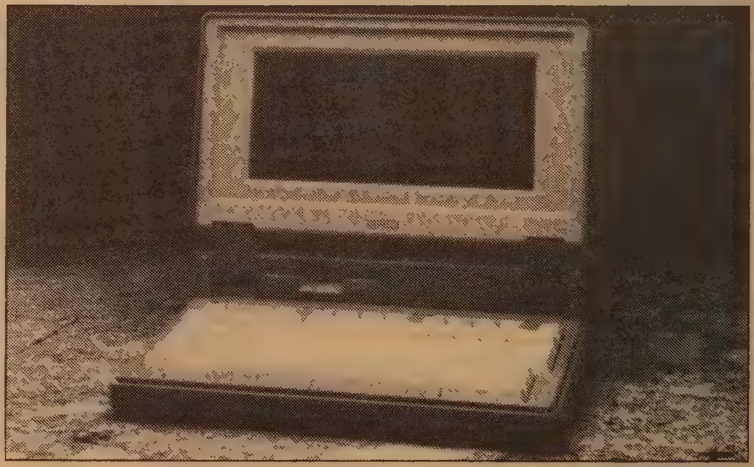
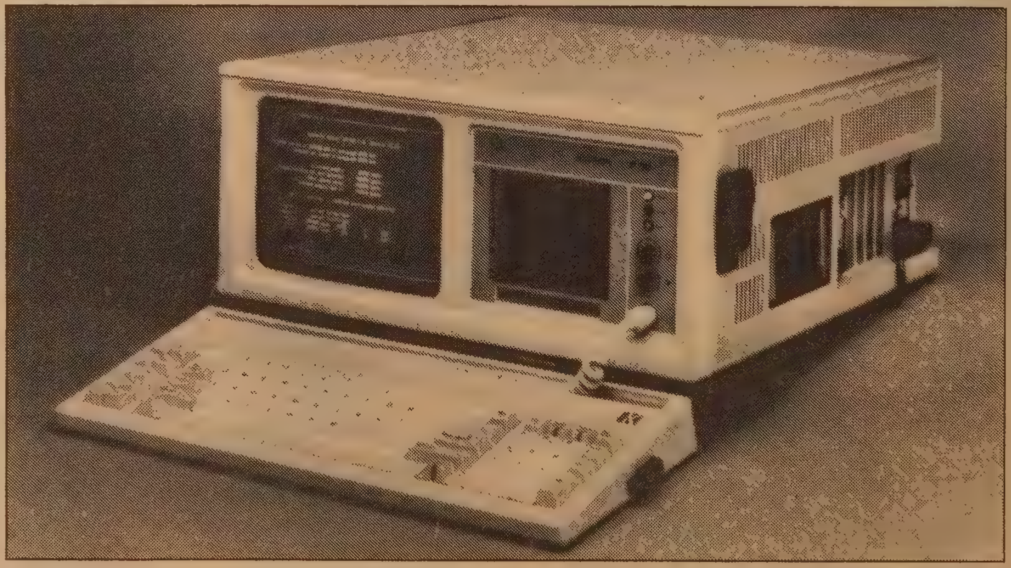
The MinisPort is Zenith Data Systems' entry into the "notebook" computer market. This laptop weighs only 5.9 lbs including removable battery, and stands about one inch high. The MinisPort is also the first notebook computer to feature the DayBright screen that can be read in any light, from intense sunlight to complete darkness. This new PC also is the first system to use 2-inch MiniDiskettes, which hold 720 K of data. The MinisPort can operate for more than three hours using an easily removable nickel-cadmium battery pack, which recharges in four to six hours. ($1999/2799) Zenith Data Systems, 1000 Milwaukee Ave., Glenview, IL 60025. (312)699-4848.

Entry-level Laptop From GRiD

GRiD Systems, makers of heavy-duty DOS-compatible laptop computers for military and industrial applications, has broadened its line of portable machines by introducing the GRiD 140 XT, a battery powered, NEC V-20-based laptop. The fully featured laptop is designed for field-based professionals who need an entry-level, dual-drive machine. The 140 XT comes standard with both a 20 Mb hard drive for users who need to access data on the road, and a 31/2 inch, 720 K floppy drive for easy data input. The computer, which runs at 8 MHz, includes a removable, rechargeable NiCad battery with a life of two to three hours. ($2595) GRiD Systems, Inc., 47211 Lakeview Blvd., Fremont, CA 94537. (415)656-4700.





Industrial Strength Portable From Kontron

Kontron Electronics, Inc. has announced a line of industrial computers, new 286- and 386-based AT compatibles designed specifically for use in harsh, rough, dirty, and electrically noisy environments. Compatible with all MS- and PC-DOS software, Kontron's industrial computer systems are built with heavy gauge metal housing shielded against dirt, dust, and water splashes. All Kontron industrial computer systems provide filtered positive pressure cooling, over-voltage protection, vibration-absorbing shock mounts for all moving parts, and automatic temperature monitoring. At about 35 pounds, the IP286 (also available with a 386 processor as the IP386) is readily transportable and totally self-contained. It has an integral 9-inch high-res monochrome monitor with Hercules 720 x 348 graphics and has both floppy and hard disks in 3 1/2 inch format. The keyboard is connected to the system with a heavy piano hinge which allows it to fold out and provide a stand-up workstation when the IP286/386 is placed on its back panel, monitor facing up. The IP286 runs at 10 MHz with zero wait state memory, and has a Norton SI rating of 11.2. The IP386 runs at 20 MHz, also with zero wait state memory, and has a Norton SI rating of 23.0. Kontron Electronics, Inc., 630 Clyde Ave., Mountain View, CA 94039-7230. (415)965-7020.

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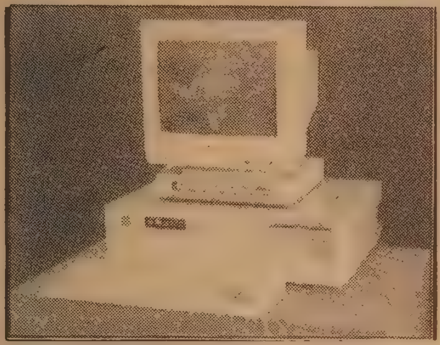

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- Technical reference manual

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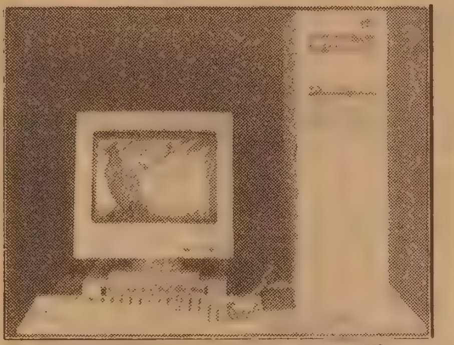
- Add $700 for 64K cache (same config as above)



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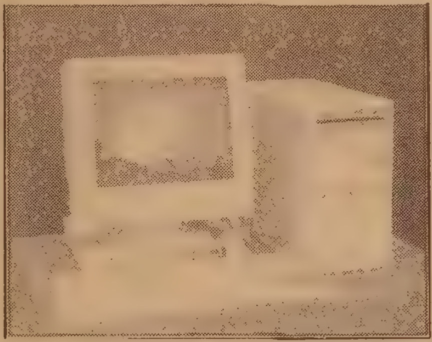

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AMIGA

BY MATTHEW LEEDS

Amiga Video Heats Up

The Amiga video market is heating up again. Commodore is starting to target the Fortune 1000 with direct marketing efforts, capitalizing on the lack of usable (and affordable) software for the Mac and MS-DOS machines. While the Mac market concentrates on producing video editing systems that run in the tens of thousands of dollars, Amiga solutions typically come in at far less.

Video editing is accomplished with a full suite of hardware, including video tape recorders (VTRs), special effects equipment, audio effects and sweetening equipment, and other goodies. The whole setup is managed by an edit controller—in effect, a video computer programmed via a list of editing events, called, appropriately enough, an Edit Decision List (EDL).

The actual process of producing the final edited version of a video production is called online editing, and it can be very expensive, with fees starting at $300/hr and going up from there. This is because all of the hardware in the edit suite is tied up during an edit session, and can't be used by anyone else. If you take time out to make creative decisions, want to try out different ideas, or just hit a creative wall, the meter just keeps on running.

It has become common practice to create preliminary EDLs offline, in an environment without all of the final editing hardware, and without the expensive price tag attached. Offlining can save thousands of dollars in editing costs.

Photon Video EDLP

The Photon Video Edit Decision List Processor (EDLP) allows you to prepare your edit decision lists offline, even at home. It provides full word-processing features, such as cut-and-paste, block moves, text search and replace, macros, real-time text scrolling, various print options, and menu or keyboard activated commands. It also offers edit list management commands, such as automatic or manual renumbering, automatic or manual ripple calculation, trim adjustments, ten constant registers, duration display, list cleaning, and list sorting on any column.

Online help is available at all times. You are always prompted as to what EDLP is expecting next. The explanation of each menu item can be displayed immediately, and a help screen describes the complete EDLP display.

Copyright ©1990. All rights reserved. Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.

A minimum of special hardware is required. To transfer the list to the MS-DOS format, all that's needed is the appropriate disk drive (3 1/2" or 5 1/4"); conversion software is supplied. To transfer the list directly to the edit controller (depending on the model), you merely need a serial null-modem cable. EDLP supports many popular edit list formats, including CMX, ISC, GVG, United Media and Convergence. In addition, EDLP will translate a list for you from almost any other format.

The Photon Video EDLP fully supports MicroIllusions' "MicroSMPTE" time code reader and other readers with an RS232 serial port. The time code reader interface gives you on-screen time code display, and allows you to mark IN and OUT times for the edit list at the touch of a button. The unique Automatic Edit List Generation (AELG™) feature allows EDLP to accurately log the IN and OUT times from a cuts-only tape simply by reading the edited time code.

Useful Video Publications

If you're new to the video scene, two new publications can help you up the steep learning curve. Ampex Corporation's Magnetic Tape Division publishes *A Guide to Media & Formats.* This guidebook includes information on media formats for analog and digital video, digital audio, and digital data recording. It provides comparison charts, specifications standards, and format overviews that go a long way towards dispelling the confusion over various format options.

Once you've gotten some idea of what the differences between Betacam, Hi-8, and MII are, you can move on to *Television Measurements-NTSC Systems*, published by Tektronix. While not a handbook on how video works, this work includes a tremendous amount of information, and with a little study you can learn a great deal about the nuts and bolts of a video signal. Both of these publications are available at no charge, just for the asking.

Animagic

Animagic knows about the nuts and bolts of computer-based video. They've been using the Amiga to produce logo and title effects for major film clients. Although the television and corporate clients best served by the Amiga's video capabilities are new to Animagic, they have already produced graphics for Nissan and other customers. The Amiga has increased productivity by 20 percent, and in some cases has allowed the company to turn jobs around in a single day.

Upgrades And Trade-Ins

A single day may be all you have left to take advantage of a trade-in offer from Commodore. Until the end of March, you can trade in your Amiga 1000 for a discount on the purchase of an Amiga 2000 system. By giving your dealer your A1000, you can purchase an A2000 for $999.95. If you prefer an A2000HD, with trade-in it will cost $1,599.95. A discount is also available on the A2500/30. Unlike the last time this trade-in was offered, you won't have the option of keeping your A1000.

Commodore is starting to target the Fortune 1000 with direct marketing efforts, capitalizing on the lack of usable (and affordable) software for the Mac and MS-DOS machines.

Commodore is making this offer to A1000 owners because when the latest version of AmigaDOS becomes available later this year, the A1000 will not be able to support all of its features. A spokesperson for Commodore stated that, among other things, the new ECS (Super Agnus and Denise chips) will be needed to take complete advantage of AmigaDOS V1.4. There have been rumors of other reasons that the A1000 will live forever with V1.3, and Commodore does not want to be seen as abandoning their early supporters.

For those diehards who refuse to trade in their beloved original Amigas, there may still be hope. A lone hardware developer is working on an add-in board for the A1000 that will let it use the ECS and other unmentioned hardware items to allow for hardware compatibility with V1.4. No word yet on his ultimate success.

PD Program Of The Month

PD program of the month is MadSizer, a mad hack by Khaled Mardam-Bey. It's a simple program that lets you size a window from any corner. Great fun as a practical joke on friends, and occasionally useful as well. ■

Resources:

MicroIllusions
17408 Chatsworth Street, Granada Hills, CA 91344

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401 Broadway, Redwood City, CA 94063

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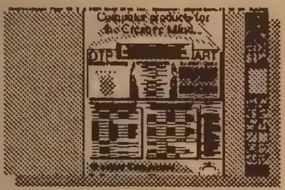

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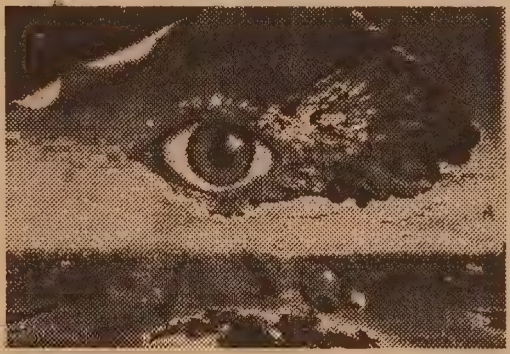

Actual image created on the Amiga

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UNIX

BY BENNETT FALK

The Theology Of Bugs In UNIX: A User's Catechism

There are no books about bugs. There are shelves full of books about programming; whole journals are devoted to algorithms, and monographs describing debugging techniques are not uncommon. But there are no books about bugs. In spite of this, the phone rings daily and voices on the other end say, "I want to report a bug."

It does no good to insist to these voices that first they say "Hello." In our particular place and time the reporting of bugs is a sacred office. A bug has been found, it must be reported.

"What sort of bug is it you wish to report?" "What sorts of bugs are there?" comes the reply.

The urge to report bugs is, it seems, innate; the knowledge of what bugs are apparently is not. Look at the clock—do we have plenty of time? Perhaps an inductive approach is best.

Pick up the UNIX System User's Manual from AT&T and read the introductory manual page for Section 1. For the uninitiated, UNIX manual entries consist of several sections that occur in the same order: NAME, SYNOPSIS, DESCRIPTION, FILES, SEE ALSO, DIAGNOSTICS, and BUGS.

"Isn't it kind of strange," the voices on the phone ask, "for there to be a BUGS section in UNIX documentation?"

You think it's strange now. Wait until you've read some of the bug descriptions.

The introduction to Section 1 very briefly describes UNIX command syntax. Under the BUGS heading is a single sentence: "Regretfully, many commands do not adhere to the aforementioned syntax."

What does this mean? Some readers will see only some questionable English usage and a bug having to do with standards: non-conformity is a defect. However, this is also a "confession-of-human-frailty" bug report, in which a "sorrow aroused by circumstances beyond one's power to remedy" is acknowledged. Non-conformity may well be a defect, but that by itself does not guarantee that standards can be enforced. In the manual page for "term" in Section 5, a similar sentiment is expressed: "This is a small candle trying to illuminate a large, dark problem. Programs that ought to adhere to this nomenclature do so somewhat fitfully."

"These," the voices say, "are not normal bug reports."

If by "normal bug report," you mean "work order to fix something," no, they are not normal bug reports. The problems recorded under the BUGS headings in the UNIX manuals may not be fixable.

"We will accept the notion of a 'standards' bug, but we are not convinced that human frailty is appropriate to a bug report. What other sorts of bugs are there?"

Consider the 'grep' command. As you may know there are several variations on 'grep' ('egrep', 'fgrep') each offering a slightly different facility for finding regular expressions in files. The manual entry for 'grep' in Section 1 of the manual records the 'economy-of-algorithms' bug; Ideally there should be only one grep, but we don't know a single algorithm that spans a wide enough range of space-time tradeoffs.

"This sounds suspiciously like human frailty again!"

The problem with 'grep' is more than human frailty. The various members of the grep family function perfectly well in most applications. They are built on sound algorithms. Structurally the programs have no defects, but the fact that their various nuances cannot be offered in the scope of a single program is cause for a bug notice in the manual. In this case, the bug is not a defect in the usual sense, it's just that we can imagine an ideal program that no one knows enough to write.

"We thought you said the problem was not human frailty. Can we move on to something a little more conventional?"

Gladly. If you read on among the bugs listed for 'grep', you'll see this notice: "Lines are limited to 256 characters. Longer lines are truncated." There's a similar notice with the 'sort' command: "Very long lines are silently truncated."

"Now this is what we call a 'bug'!"

Yes, but what is the nature of this bug? Is it the fact that grep and sort have a line limit at all? Is it the silent enforcement of these limits? No doubt there was a time when people worked at 80 column terminals with ascii editors and 256 characters seemed more than generous. Perhaps there was no bug at all until someone used grep on a file with long lines downloaded from some other source and actually lost data.

These are "limit" bugs, and they are very dangerous. When any limit that is hardcoded into a program is exceeded, there is some risk that data will be lost. But notice how difficult such bugs are to fix. We don't know what length lines the program will have to examine. We could print out a message any time the program truncated a line, but this would make it difficult to use the program in "pipelines" or other non-interactive situations.

Some have suggested in all seriousness that the only "fix" to such a bug is to document the limits and in doing so, change the users' expectation of how the program is to behave. Lovers of paradox will note immediately that the bug report itself is the fix. Pragmatists will observe that in new versions of the UNIX Manuals, the section heading for these reports has changed from BUGS to NOTES.

"We think it's very odd that you deal with a bug which may cause data corruption by managing the users' expectations."

The line between use and expectation is very thin, and it's a simple matter to move from unrealistic expectations to inappropriate usage. The UNIX manuals duly record this ambivalence toward what the users expect. Look at the manual entries for "script" (which appears only in the Berkeley UNIX Manual) and for "cal".

The "script" command records an entire terminal session in a file. The bug notice for "script" reads: Script places *everything* in the log file. This is not what the naive user expects.

Cal produces a calendar for any year or month the user specifies. The BUGS section for cal reads: "The year is always considered to start in January even though this is historically naive." Cal prints out the calendar the modern user expects even though such a calendar may be inaccurate. The authors of the bug reports in the UNIX manual tolerate naiveté, but only to the extent that the accuracy of results is not compromised.

There was a brief silence.

"Let us get all this straight," the voices posed.

"It's a bug not to conform to standards, but it's probably not possible to enforce conformity. It's a bug when a perfectly useful program does what it is supposed to do in a way that might not be ideal, even though we don't know how to implement the ideal solution. It's a bug to hardcode limits, but maybe not, if users never run into them or if the limits are documented. It's a bug to confuse a user unless avoiding confusion means incorrect results. This is not what we thought bugs were."

No doubt you could find other sorts of bugs if you looked carefully through the manual, but these are representative. They've been in the manual for years.

"Does anyone ever try to fix them?"

How would we learn about bugs if they did? ■

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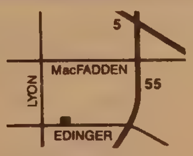

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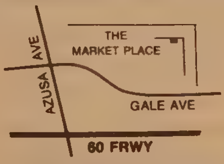

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ATARI ST

BY DAVID HAWKINS

News From Atari

From time to time someone will ask me why I only write about Atari computers and programs, instead of about what's going on inside Atari. The answer is quite simple—I don't know anything about what Atari Corporation is like. Thus, I have no idea what Atari should be doing or any ideas about how Atari could improve. I'm not saying that ignorance is bliss, but it works for me.

I did hear some good news about some of the new people at Atari, and thought I'd pass that along.

User Groups

Bob Brodie is now Atari's User Group Coordinator. From what I've heard he's funny, accurate, and hard working. The weekend of February 17-18, he went to Michigan. Earlier in the week he visited ST ACE (the ST Atari Computer Enthusiasts) in Santa Rosa. He had a STACY, a STe, and a Lynx at the Santa Rosa meeting. Evidently he's willing to get out and do some traveling. Have your user's group contact him.

Development

Another important position at Atari involves contact with developers—the people who write, debug, and distribute software and hardware that works with the Atari. Charles Cherry is now handling that work, and again, all the reports have been positive. Some of Atari's policies involving developers are changing, so the following may not be completely accurate. If you are interested in developing software for the Atari, contact Charles Cherry directly at (408)745-2082, or write him c/o Atari Corporation, 1196 Borregas Avenue, Sunnyvale, CA 94086.

Latest Policy (Subject To Change)

The last I heard was that Atari was recognizing two groups of developers—those working on a commercial product and those who don't have commercial product as a primary goal. Either type of developer can register with Atari. I also have a note here that shareware does count as a commercial product.

Copyright © 1990 by David Hawkins. All rights reserved. David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco. Both monitors, an Okimate 20 color printer, and disks all over the room.

Registering as a developer costs $250. A registered developer receives discounts on Atari hardware, a software kit with information about the ST/TT/STe, a copy of the Alcyon C compiler, the MADMAC assember, a debugger, a linker, a subscription to a newsletter, and online support. Developers with a commercial product also get marketing support and access to a customer registration address list.

Again, if you're interested in being a developer, need information, or have suggestions, contact Atari.

Vice President

Third on the list of people I've heard good things about is Bill Crouch, who is Atari's Vice President of Sales. I'm glad to hear that Atari continues to attract good people.

Atari Virus

By the way, there is a virus out there in the ST world—it's called the KEY virus. The KEY virus has been found in several commercial program distributions, so it would be a good practice to check for it even if you are careful about the source of your programs. To counteract it, you can get a program called vkiller from your local user's group or possibly from a BBS. The vkiller program was written by George Woodside.

If you have a disk that you suspect has a virus, one thing to do is get that disk to someone who knows something about viruses. You could take it to a user's group meeting, or get a copy of an antivirus program and see if it has instructions on where to send an infected disk.

Program Updates

I don't have a copy yet, but I've heard a lot of good things about the latest update of WordPerfect. If you're not sure if you're up to date, check the date in the "Information" box—it should be 8/18/89. For information about the update, contact WordPerfect Corporation, 81 North State Street, Orem, Utah 84057; (801)225-5000.

Likewise, PageStream, a desktop publishing program, is now at version 1.8. Again, I don't have an update myself, but have heard a lot of good things about this one. ■

Registering as a developer costs $250. A registered developer receives discounts on Atari hardware, a software kit with information about the ST/TT/STe, a copy of the Alcyon C compiler, the MADMAC assembler, a debugger, a linker, a subscription to a newsletter, and online support.

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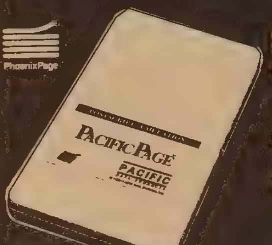

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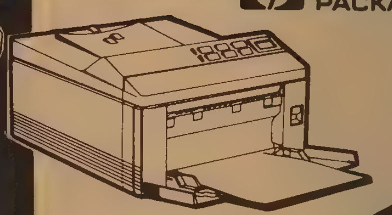

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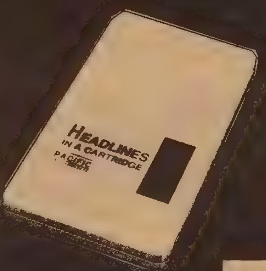

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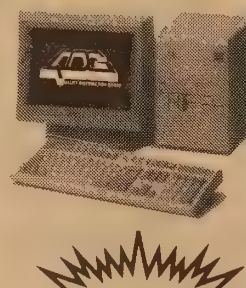

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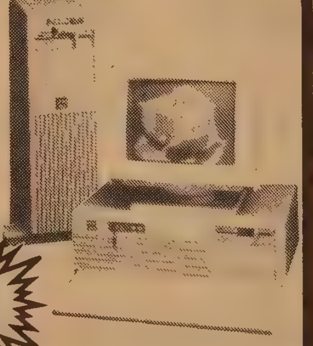

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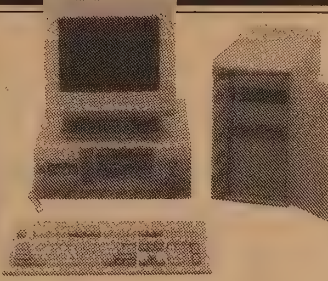

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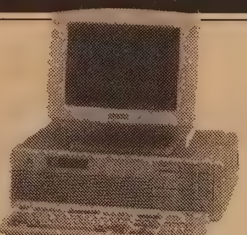

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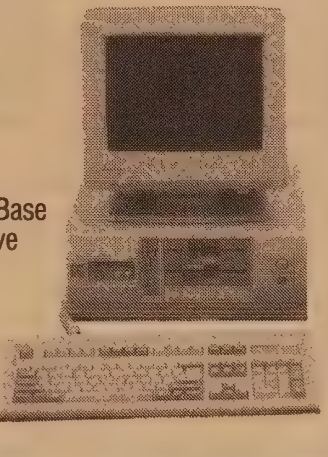

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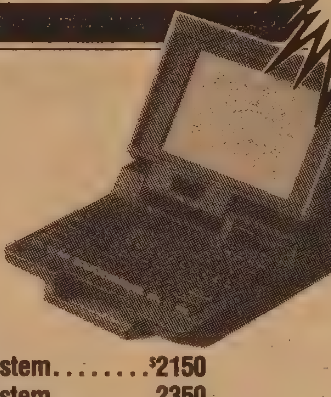

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USER GROUP NETWORK

BY MARY EISENHART

Faire Again

The West Coast Computer Faire is coming to San Francisco from March 1 to March 4, and we hope to see some of you there. PR maven Ed Niehaus has somehow induced me to participate in a panel on "Public Relations For Small High-Tech Businesses," which takes place on Friday the 2nd at 12:45 pm, which should be interesting…

As *MicroTimes* readers will recall, the once-proud Faire fell on bad times last year. Most in attendance allowed as how they'd seen more excitement at the local swap meet; its own founder, Jim Warren, outspokenly railed against his brainchild's sorry state, and John Dvorak wasn't exactly thrilled either.

This year seems to represent a serious effort by The Interface Group, the Faire's owners, to restore some of the prestige and excitement the show once enjoyed as the premier user-oriented computer expo. Exhibitors range from prominent software vendors like WordPerfect and Autodesk to service providers like GEnie and Prodigy to local retailers to a generous array of user groups. Borland, Autodesk, Microsoft, Wolfram Research, and other software leaders will be demonstrating their products in special demos, as will cellular phone suppliers, scanner providers, and other specialists.

The conferences, one of the Faire's historic strengths, reflect a lot of recruiting effort and look pretty promising (even if PR For Startups isn't your main interest). Xanadu's inimitable Ted Nelson, Father of Hypertext, whose current wonderful title is Distinguished Fellow at Autodesk, will deliver the keynote address at 10:30 am on March 1; Ted has chosen for his theme "Toward A New Clarification," which is likely to mean just about anything and be worth hearing. Jerry Pournelle does his annual "World According To Jerry Pournelle" session at 12 noon on March 3. MicroAge's chairman Alan Hald will speak on "Virtual Reality: The Next Revolution"; whether this portends the arrival of VR kits at MicroAge dealers is a matter for speculation. T/Maker President Heidi Roizen will speak on "Software Solutions For The Home Office"; FOG's Gale Rhoads will discuss "Hypertext And On-Line Information Management"; Jan Lewis and Steve Rosenthal each have multimedia sessions, and Chris Crawford has a session for prospective game designers. Well, you get the idea. Head north. The Faire runs March 1-4 at Brooks Hall/Civic Auditorium in San Francisco, and you can call The Interface Group at (617)449-6600 for further details.

A reminder: All the listings you see before you this issue will disappear next month unless we get new ones by **March 15,** so don't delay. You can use a variety of approaches to communicate with us: US Mail goes to User Group Network, 5951 Canning Street, Oakland, CA 94609. Send faxes to (415)652-4618 or (213)467-5486. Email can be sent to **microx** on **The WELL** (415/332-4335), **MICROTIMES** on **MacNET and MCI Mail**, or **{pacbell, hplabs, ucbvax, apple}!well!microx** on uucp. Thanks, and see you next month.

Changes Ahead: Don't Be Left Out

In a continuing effort to provide you with timely, accurate and manageable information about user groups, professional associations, and bulletin board systems, we're instituting some changes. Beginning with our April issue, we will be featuring all-new user group and BBS listings. **If you want us to keep listing your group or board, use the coupon on page 118 to send us a new listing now!**

DEADLINE FOR INCLUSION IN THE APRIL ISSUE IS MARCH 15!

Free user group and association listings are limited to the group's name and a ten-word description, **including the mailing address and contact phone number.** They will be deleted at six-month intervals to ensure timeliness and accuracy of information.

Free BBS listings are also limited to the board's name, sysop's name, and a ten-word description including parameters, baud rate and phone number. Because we have an ongoing problem of boards shutting down without telling us, much to the annoyance of would-be callers and the phone number's new owner alike, we will delete these listings after they've run three months.

You can update or renew your listings at any time.

If you want to run a longer listing, please check our attractively priced classified ad section.

Please note that any changes not appearing in this issue will not appear until the April issue. Thanks!

—MicroTimes editors

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Cassia Express. (065)344-9163. 300/1200/2400 24 hrs. Singapore. Sysop: N.M.Rahman.

FidoNet Argentina. (054) (011)541-22-419. 8-N-1 3 pm-11 am PST. The 1st fido node in Argentina has over 450 subscribers. Specializes in issues from S.A. PD software library to d-load. Sysop: Pablo Kinman.

Janis II. (03)255-8856. 24 hrs, 1200/2400/9600. Japan Newsbytes, USA Today, InfoMat magazine, Online Digital Music Review. Over 500 megs info & D/L Pgms on HDD. Sysop: Pete Perkins. Voice: (03)255-8880.

Remote Bulletin Board (Singapore). (065)445-1646. 9600/2400/1200 24 hrs. 218 Mb Online (IBM upload/download). Sysop: Umar A. Rahman.

203

Terrapin Station. (203)656-0134. Grateful Dead Board. Sysop: Klaus and Gretchen Bender.

209

Bertha Board BBS. (209)823-0093 300/1200/2400/9600, or (209)239-9853, 1200/2400, 8-N-1, 24 hrs. MS-DOS, others. 220 Mb online. Emphasis on programming. Uploads and downloads. No fee. Sysop: Kenneth Roach.

Don's Dental Service. (209)239-4828. 8-N-1, 24 hrs, 1200/2400. On-line dental supply catalogs, No. CA Society schedules, post-graduate course schedules from UCLA, UOP, and Cal. Free. Sysop: Don Carlson.

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Oasis Software Library. (209)823-2803, 300/1200/2400, 8-N-1, 24 hrs. Shareware and PD for IBMs and compatibles. No fee but registration required. Sysop: Tim Campi.

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Beaver Creek. (213)437-1410. 8-N-1, All but 4-9 pm. Sysop: John Campbell.

Century Computers Amiga BBS. (213)697-2004, 24 hrs, 1200/2400. Sysop: Philip Marhqrst. Voice: (213)697-6977.

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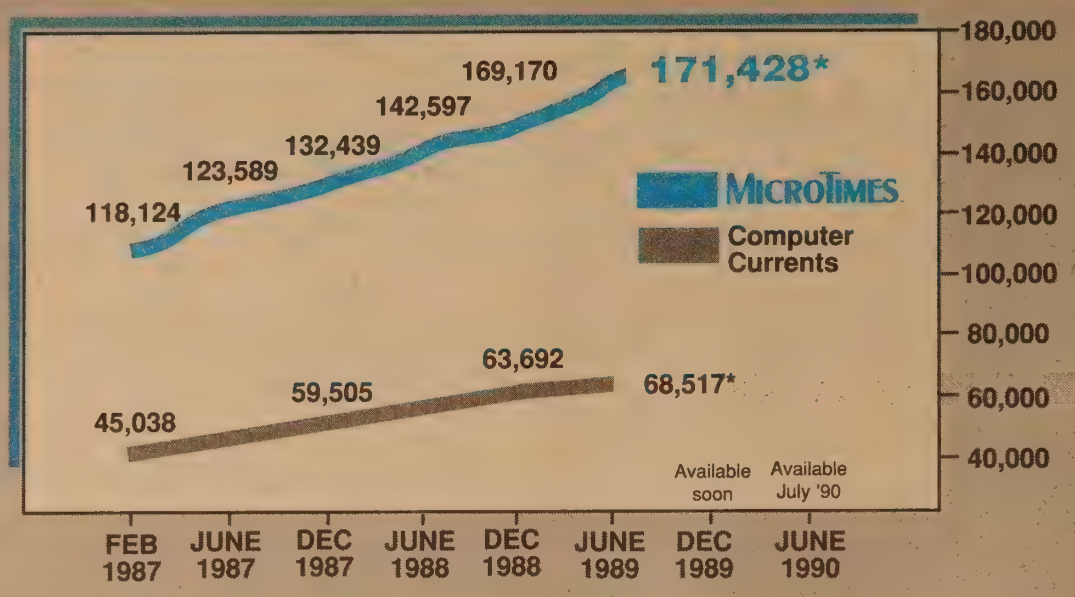

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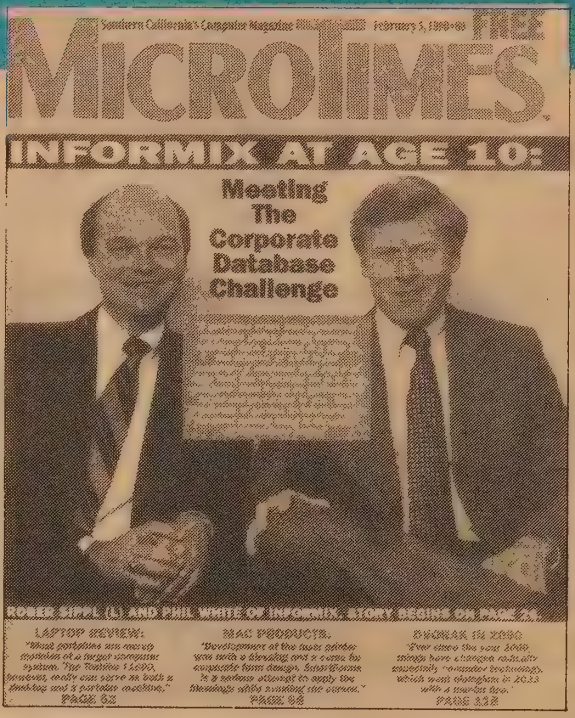
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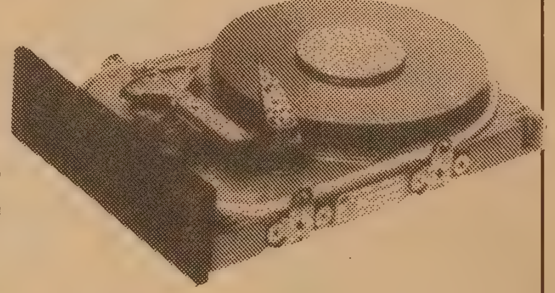

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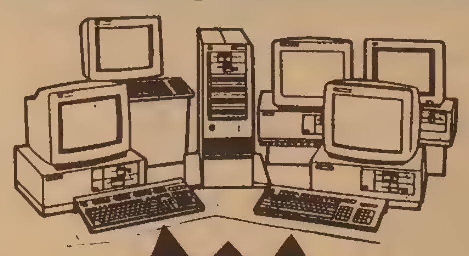

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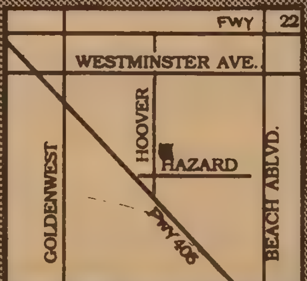

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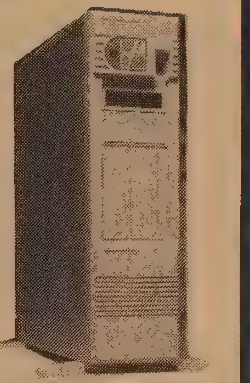

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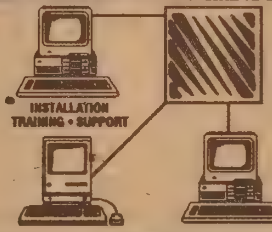

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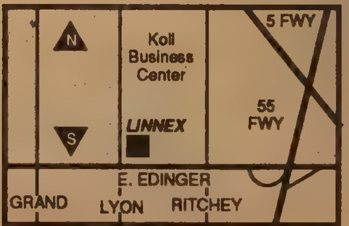

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WORD PROCESSING

- **HELPPERFECT (801)** for 5.0, **(802)** for 4.1 & 4.2. NEW! Incredible must-have WordPerfect utility. Pull-down menus w/70 commands.
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- **RETURN TO KROZ (291)** NEW! Unique arcade-adventure game. Sequel to prize-winning Kingdom of Kroz.
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- **CRIME LAB (279)** Great, unique graphic murder mystery game. Needs CGA or EGA.
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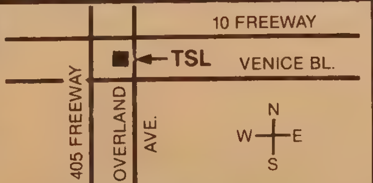

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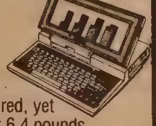

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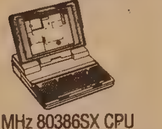

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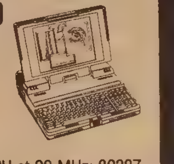

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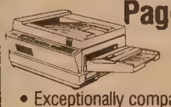

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User Groups

ACCOUNTING

O.C. MAS.90 Acctg Software User's Group. Meetings: 1st Tuesdays, 6:30 pm. Call: (714)962-4760.

AMIGA

Amiga Friends. Meetings: 3rd Sun. Rancho Santiago College, Rm R-124, 17th & Bristol, Santa Ana. Call for current meeting info: (714)775-7237 (24 hrs.) or write: P.O. Box 4186, Huntington Beach, CA 92605.

Amiga Special Interest Group. Meetings: 1st Sunday except holidays. Chapman College, 333 N. Glassell, Orange, CA. Amiga SIG is part of the North Orange County Computer Club, a thousand member organization together 12 years.

Amiga User's Group Of Long Beach. Meetings: 3rd Sundays, 1 pm, Mid-Cities National Bank, Lakewood and Artesia, Bellflower. Tech, Beginners, Video/Graphics SIGs. (213)422-8226/432-2088.

Bits & Pieces Amiga Group of Anaheim. Meetings: each Tues. 6:30-10 pm 1130-A North Kraemer Blvd., Anaheim, CA. DOS Classes, tech. help & more. BBS: (714)630-8897.

LAAUG-Los Angeles Amiga Users Group. Meeting: 3rd Wednesdays @ 7:30 pm. Veteran's Auditorium at Overland Ave. & Culver Blvd. Many SIGs, Rookie, music, video, monthly PD disks. Call: (213)858-8073.

Pacific Computer Club. Meetings: 2nd Thurs. 7 pm 391 S. Madison, Pasadena, CA.

San Fernando Valley Amiga Users Group (SFVAUG). Meetings: last Tuesdays, 7 pm, The Meeting Room, Fallbrook Mall, 6507 Fallbrook Ave, Canoga Park. Call: Tony, (818)985-0476.

South Bay Amiga Dudes. Meetings: 3rd Thursdays, 7 pm, Redondo Beach Blvd., Lawndale. Call: Charlie Breene at (213)540-2834.

South Orange Commodore Klub (SOCK). Meetings: 3rd Saturday 9:00 am. Union Savings, 23688 El Toro Road, El Toro, CA. For Commodore 64/128 users and Amiga users. One-hour general meeting is followed by separate group meetings for each.

AMSTRAD

Amstrad Users Club Of Orange County. Meetings: 3rd Saturdays, 10 am til 2 pm. Board Room upstairs in the Santa Ana Library, Civic Center & Ross Streets. For more information call: (714)953-6471.

Amstrad Users Group, USA. Meetings: Free mail and phone support for PCW. 12741 Matteson Ave. #3 LA 90066. (213)397-7981.

APPLE

Valley Apple Computer Club. Meetings: 3rd Tuesdays, 7:30 pm, Union Federal Savings ans Loan, 7040 Sepulveda Blvd. Appleworks SIG at 6:30 pm. club meeting at 7:30. Discussion on Apple, Mac, Amiga, IBM. BBS: (818)782-6471. Uploading/downloading. Visitors welcome. Eamon games, misc. Call: Dr. William H. Trent, 818)988-1752.

Original Apple Corps. Meetings: 2nd Sun. 12:00 Noon 3rd Floor Community Room, Santa Monica Mall. First Apple group ever. SIGs for AppleWorks, Telecomm, Educators, Macintosh. Call Fred Duffy at (213)396-5515.

Tri-City Apple Users Group. Meetings: 3rd Thurs., 7:00 pm, Pasadena Central Library Auditorium, 285 E. Walnut St., Pasadena.. Call (213)258-0281. Friendly Apple II experts.. Info exchange, BBS, puboic domain library, raffle, newsletter. Write to TAUG, PO 93123, Pasadena, CA 01109.

ATARI

Atari Computer Association Of Orange County. Meetings: 2nd Sun. Rancho Santiago College, Room W101, Santa Ana. BBS: (714)540-7378.

North Orange County Computer Club Atari ST SIG. Meetings: First Sundays, Chapman College in Orange. (714)552-5185, or Bill, 633-4665, or Mac, 751-3090.

Santa Clarita Valley Atari Computer Enthusiasts (SCVACE). Meetings: 1st Thurs. 7pm Mint Canyon Moose Lodge, 18000 W. Sierra Hwy, Canyon County. 8-bit group. Atari ST special group now forming.

South Bay Atari Computer Enthusiasts (SBACE). Meetings: 2nd Tuesdays, 7:30 pm, Lomita VFW Hall, 1865 W. Lomita Blvd., Call: Alan, (213)542-7870.

West LA Atari Users Group. Meetings: 1st & 3rd Wednesdays, 7:30 pm, The Federated Group store, Santa Monica. Call: Bill, (213)559-2349.

CLIPPER

Fresno Clipper User Group. Meeting: 4th Thursdays, 7:00 pm. Call: John Rogers, (209)251-7527.

Los Angeles Clipper User Group. Meeting: 4th Wednesdays, 7:30 pm. Call: Theresa Padilla, (213)452-0370.

Orange County Clipper User Group. Meeting: 4th Thursdays, 7:00 pm. Call: Steve Hilton, (714)847-7123.

San Diego Clipper User Group. Meeting: 4th Tuesdays, 7:30 pm. Call: Mick Keily, (619)569-8234.

Valley Clipper User Group. 7:30 pm. Call: Igor Lelchitsky, (818)716-8790.

COMMODORE

Bits & Pieces Commodore Computer Group of Anaheim. Meetings: each Tues 6:30 pm 1130-A N. Kraemer Blvd. (Kraemer & La Palma), Anaheim. Offers public domain software, demonstrations, interactive training on your computer. $33 annual dues.

CLUB-64. Meetings: 1st Thursdays, 7 pm, Knights of Columbus Hall, 1729 E. Baseline, San Bernardino. Large PD library, school, CABB BBS, PO 514, Patton, CA 92369. Call: 5 pm to 9 pm, (714)862-5126.

Commodore 64 Software Users Group. For new Commodore owners. One-on-one help. Call (714)531-2977 for info.

Commodore Helpers Of Long Beach. Meeting: 2nd Saturdays 9 am, Mercury Savings And Loan, 4140 Long Beach Blvd. Long Beach C-64 & C-128. Call: (213)424-0508.

C–128 West Commodore User Group. Meetings: 2nd Tuesdays, 7 pm, McKinley School auditorium, Santa Monica Blvd. (except during summer). Call: 6–9 pm, John Calhoun, (818)331-1589.

Mother Lode Commodore Users Group. Meetings: 2nd & 3rd Thursdays. Calaveras County Water District Board Room. Supports the Commodore PET, VIC, 64, Plus/4, C-16 & 128.

Nebula 6. Call BBS for more info & online glance at what group offers. BBS (714)595-6577, 300/1200/2400. Write for info: P.O. Box 1071, Walnut, CA 91788.

OKOK Computer Users Group. Meetings: 2nd Wed. 7-9 pm Altadena Public Library, 600 E. Mariposa. Call (818)794-3243. Serves Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and CP/M operating systems.

Orange County Commodore Technical Users Group (C-TUG). Meetings: 4th Sun. 11:00 am, 4th & Tustin, P.O. 1497, Costa Mesa, CA 92628. Newsletter; 2 BBS's; door prizes; demos, raffles, speakers, (714)750-3003.

Pacific Computer Club. Meetings: 2nd Thurs. 7 pm 391 S. Madison, Pasadena, CA.

Pasadena Commodore Computer Club. Meetings: 1st and 3rd Weds. 7:00 pm Circadian Room, Pasadena City College Cafeteria. Colorado Blvd & Hill, Pasadena. Call (818)447-2212 after 2:30 PST or write P.O. Box 163, Arcadia, CA 91006. Supports C64 and 128 machines.

San Fernando Valley Commodore User Group. Meetings: 4th Wednesdays, 7:30 pm, Union Federal Savings, Sherman Way and Sepulveda Blvd., Van Nuys. (818)342-0012.

South Bay Commodore Users' Group. Meetings: 4th Tuesdays, 7:00 pm, Home Federal Savings Conference Room, 1670 Pacific Coast Highway, Redondo Beach.

South California Commodore Users Group. Meetings: 3rd Tuesday each month, 7:00 pm, MidCities National Bank, Lakewood and Artesia Blvds., Bellflower, CA.

South Orange Commodore Klub (SOCK). Meetings: 1st Wed. 7 pm, Laventhol & Horwath, Exec. Conf. Rm. 7th Fl., 3699 Wilshire Blvd., LA, CA.

The Orange County Commodore Club. Meeting: 4th Saturdays, 11:00 am, Mercury Savings And Loan, Mercury Room, 7812 Edinger Ave., Huntington Beach, Call: Mike Moore at (714)968-6250, or Howard Phillips at (213)861-4165.

dBASE

UCLA PCUG dBASE SIG. Meetings: 3rd Wednesdays, 7:30 pm. Call: (213)874-7471.

Valley West dBASE Users Group. Meetings: 3rd Mon. 7:00 pm, Blue Cross Of California, 21555 Oxnard St., Woodland Hills. Call (818)789-0723 or write P.O. Box 16971, Encino, CA 91416.

DEC

DECUS Rainbow Pacific PC-LUG. Meetings: 2nd Wed. 7:00 pm, Digital Equipment Corporation, 6101 W. Centinela, Ave., Culver City. Digital Equipment Computer Users Society. Free to DEC users. Call Karen Danforth (818)787-8736 or write P.O. Box 2278, Van Nuys, CA 91404.

DESKTOP PUBLISHING

Southern California Ventura Publisher User Group (SC-VPUG). Meetings: last Wednesdays, (except for December) 7–10 pm, Questions & Answers, product demonstrations. Library of resources. Very active group! Location changes, so c all: (818)955-5830.

VICUG–DTP. (Valley IBM/Compatibles Users Group). Meetings: 2nd Fridays, 7:30–10:00 pm. Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. Call: Harry Tischler, (818)997-6000.

EPSON

San Fernando Valley and Los Angeles Epson QX User Group. Meetings: 3rd Tues. 7 pm, 6025 El Escorpion Rd., Woodland Hills. Call: (818)349-7417.

IBM AND COMPATIBLES

Calsonic PC Club. Meetings: 1st Tues. 5:15 pm, 9 Holland, Irvine, CA.

Greater South Bay PC User's Group. Third Thursdays, @ 7 pm, Building behind Christ the King Lutheran Church, 2706 W. 182nd St. Torrance. Newsletter, BBS, more! Guests welcome. Call for more information. Evening: (213)532-2123.

Greater South Bay Users Group (GS-BUG). Meetings: Second Wednesday of each month, 7:30 pm, Fellowship Hall at the rear of Christ The King Lutheran Church, 2706 W. 182nd St., Torrance. SIGs, BBS, newsletter, library and more.

IBM & Compatibles Users Group-Ontario Area. For information call: (714)982-1270.

Kern Independent User Group. Meetings: Write Kern Independent PC User Group, P.O. Box 2780, Bakersfield, CA 93303.

Long Beach IBM Users Group. Meetings: 3rd Wednesdays. 7 pm, 5950 Willow St. at Los Altos Methodist Church, Long Beach. Contact: Jim Wells. (213)439-7114.

Lotus And Business SIG. Meetings: First Sundays (verify at 718/998-8080), 11:15 am, Chapman College, City of Orange, Hashinger Hall. SIG of 1200-member N. Orange County Computer Club. Call: Vance Jochim, (714)962-1857.

MicroLink PCUG. Meetings: 1st Saturdays, 15865-B Gale Ave. #1003, Hacienda Heights. Call: Jay Graham, (818)918-7042.

Mid-Wilshire PC User Group. Meeting: 2nd Thursdays, Conference Room of Forty Plus, 3450 Wilshire Boulevard, Suite 510, Los Angeles. Call: Robert, (818)790-5884.

OKOK Computer Users Group. Meetings: 2nd Wed. 7-9 pm Altadena Public Library, 600 E. Mariposa. Call (818)794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and C/PM operating systems.

Orange Coast IBM PC User Group. Meetings: last Sat. 9 am Science Hall, Orange Coast College, Costa Mesa, CA.

Orange County IBM PC Users Group. Meetings: 2nd Thursdays 7:30 pm. Bradford Retirement Community Center, 1180 N. Bradford, Placentia. Meetings feature guest speakers on hardware and software topics related to the interest of our members. Other activities include sharing tips and problems, access to club library and a club newsletter. Call: Mike Lyons, 2114 W. LaPalma, Anaheim, CA 92801. (714)774-3236.

Pacific Computer Club. Meetings: 2nd Thurs. 7 pm 391 S. Madison, Pasadena, CA.

Pasadena IBM Users' Group. Meetings: 3rd Wed. CalTech, Bridge Bldg., Rm. 201. Call Steve Bass, (818)795-2300.

PC*UG Computer Club. For Hughes Aircraft Employees. Call (213)334-3422.

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Riverside IBM Club. Meeting: 1st Mondays, Riverside. Call: James Heidecke, (714)685-5407.

Saddleback College IBM-PC Users Group. Meetings: 3rd Sat. Room 210, Business and General Science Building, Saddleback College, Mission Viejo. Call Susan Gordon at (714)582-4650.

South Bay Users Group (SBUG). Meetings: 1st Sun. Mercury Savings, Long Beach, CA.

South County PC Users Group. Meetings: 3rd Sat. 9 am Great American Savings, 23688 El Toro Rd., El Toro, CA.

SWPC Users Group. Meetings: Saturday mornings, various places. Call: Christine Tripp, (213)935-4105.

Technical Users Group (TUG-NET). Meetings: Call for info (818)882-6045. BBS (818)882-6045.

The Foothill Computer Club. Meetings: 1st Wednesdays, 6:30 pm, Glendale Federal Bank, 2350 Honolulu, Montrose. Call: (818)790-6672.

The IBM & Compatibles User Group (ICUG). Meetings: 4th Thurs. 6:30 pm or 7:30 CAL Lutheran Univ., 60 W. Olsen Rd., Thousand Oaks. Group is 5 yrs. old & has 150 members Meetings begin at 6:30 for beginners, 7:30 regular members.

The Southern California K-Man Users Group. Meetings: 1st Wednesday, 7:00 pm, Laventhol and Horwath, Executive Conference Room, 7th Floor, 3699 Wilshire Blvd., LA Demo of the month features new software and hardware.

TRS Nybblers. Meetings: 1st Wed. 7 pm 2006 W. Magnolia, Burbank. Supports MS-DOS, CP/M, IBM or IBM clones.

UCLA PC Users Group. Meetings: 2nd Tuesdays, 7 pm, Neuro Psychiatric Institute, Level C Auditorium, UCLA campus. Call: (213)650-4700.

Valley Computer Club—IBM. Meetings: 1st Wednesdays, 7 pm, Burbank Bd. of Realtors Bldg., 2006 W. Mangolia, Burbank. Call: Wes Arnold, (213)221-4433.

VICUG (Valley IBM/Compatible Users Group). Meetings: 4th Fridays, 7:30 pm, Mercury Savings Bank, 14801 Ventura Blvd., Sherman Oaks. Call: Harry Tischler, (818)997-6000.

VICUG–DTP (Valley IBM/Compatibles Users Group). Meetings: 7:30–10:00 pm, Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. Call: Harry Tischler, (818)997-6000.

KAYPRO

OKOK Computer Users Group. Meetings: 2nd Wed. 7-9 pm Altadena Public Library, 600 E. Mariposa. Call (818)794-3243. Serves: Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and C/PM operating systems.

LEADING EDGE

Leading Edge Computer User Group of Ventura County. Meetings: 2nd. Sat. 10 am Camarillo Library, 3100 Ponderosa Dr., Camarillo, CA. Lectures on hard/floppy disk usage; program demos; beginner classes. Single: $20, couple $25.

LASER PRINTER

Laser Printers Users Group. Call: (213)281-3127.

MACINTOSH

APX, Inc. An national intercorporate computer users information service with several communications channels including an electronic forum on MacNet, newsletters, and local and national meetings and special panels. Several local chapters exist, you can start one too. Call: (408)745-0665. Write to: Mike Bailey, APX, 370 Altair, PO 175, Sunnyvale, CA 94086.

California State University Macintosh Users Group. Meetings: California State University, Long Beach. Open only to faculty and staff. Call: Lou Zurier, (213)985-4490.

Conjo Ventura Macintosh Users Group, Inc. Meetings: 1st Thursdays, Thousand Oaks Public Library, 1401 E. Janss Road, Thousand Oaks. Call: Ed or Ellie Darling at (805)584-8733.

LAMG (Los Angeles Macintosh Group). Meetings: Call (213)278-LAMG or write 12021 Wilshire Blvd. #349, Los Angeles, CA 90025.

MacValley Users Group.. Meetings: 1st Wednesdays, 7:30 pm, Wilkinson Senior Center, 8956 Van Alden Ave., Northridge.. Call David Lagerson, (818)882-4467 or write P.O. Box 4279, Burbank, CA 91503.

Moreno Valley Macintosh Users Group (MVMUG). Product demos, newsletter, SIGS, BBS, more! For information about the club and meeting call: (714)684-1337.

Original Apple Corps. Meetings: 2nd Sun. 12:00 Noon 3rd Floor Community Room, Santa Monica Mall. First Apple group ever. SIGs for Apple-Works, Telecomm, Educators, Macintosh. Call Fred Duffy at (213)396-5515.

San Gabriel Valley Macintosh Users Group. Meetings: 1st Thursdays, 7:30 pm, Pasadena City Library, 285 E. Walnut. (213)684-4266.

Santa Barbara Macintosh Users Group. Meetings: First Tuesdays, @ 7 pm, Goleta Library. Publishes a newsletter with reviews, offers advice, support for Mac users, discounts at local dealers. Call: Morris Herman, 987-5511, x 2083.

SBAMUG (South Bay Apple Mac User Group) Meetings: Last Wednesday of each month, 7:30 pm, 1214 Pacific Ave., Manhattan Beach... Call (213)316-7738.

West Orange County Macintosh Users Group (WOCMUG). Meetings: Last Tuesday. F & M Bank in Rossmore Center, Orange County, CA.

Whittier Area Mac Users Group. Meetings: 2nd Saturdays, 10 am, Granada Heights Friends Church, 11818 S. La Mirada Blvd., Rm. C-21. (213)947-2447.

NETWARE

Orange County Netware Users Group (OCNET). Meetings: 2nd Tues., New Horizons Computer Learning Center, 1231 E. Dyer Road, Suite 140, Santa Ana. Various SIGs. Open to users, consultants, all interested in NETWARE. Call Mark at (714)955-0616.

NetWare User Group Los Angeles (LOSNET). Meetings: 2nd Wednesdays. Welcomes consultants, CPA's, dealers and users interested in sharing information on NETWARE and related products. Call Fane, (213)452-1335. 2716 Ocean Park Blvd, Santa Monica 90405.

OPEN SYSTEMS

Open Systems Accounting, So. Cal Users Group (OSASCUG). Meetings: 4th Wed. Wyle Labs, Irvine, CA. Users of Open Systems, Altos Accountant, CADO, & Rexon accounting software. Open to end users, dealers and consultants. Call Mark at (714)955-1724.

OSAS Systems Users Group Los Angeles (OSASUGLA). Meetings: 1st Wednesdays. Welcomes consultants, CPA's, dealers, users and QI's interested in sharing information on OSAS and related products. Call Fane, (213)452-1335. 2716 Ocean Park Blvd., Santa Monica 90405.

OSBORNE

OKOK Computer Users Group. Meetings: 2nd Wed. 7-9 pm Altadena Public Library, 600 E. Mariposa. Call (818)794-3243. Serves Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and C/PM operating systems.

R:BASE

Law Enforcement R:BASE Users Group. Meetings: Online. Available through the Safetynet Forum on CompuServe. Monthly newsletter for those without a modem. Users share tips and techniques. The group acts as a clearing house for PD and shareware law enforcement applications. To join, officers must leave a private message in CompuServe's online Safetynet Forum.

UCLA PCUG R:BASE SIG. Meetings: Last Wednesdays. Call: Mike

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SAGATUG—The San Gabriel Valley Tandy User's Group. Meetings: 2nd Friday, 7 pm, Arcadia Park Senior Citizen's Center, 405 S. Santa Anita Ave., Arcadia. Call: George, (818)548-8871.

South Bay Users Group (SBUG). Meetings: 3rd. Fri. Mercury Savings, 22939 Hawthorne Blvd., Torrance, CA.

TEXAS INSTRUMENTS

Pomona Valley 99ers. Meetings: 7:30 pm, 2nd Wednesday, Pomona First Federal, 9900 Central Ave. Call: Bill Hauns. (714)628-1334.

Brea 99'ers User Group. Meetings: 1st Mondays, 7:30 pm, Mercury Savings 1001 E. Imperial Blvd., La Habra, CA. (714)871-3405.

LA 99er Computer Group, 4th Wednesdays, @ 7:15 pm, Torrance Public Library, Torrance Blvd. @ Madronna. Call: Teresa Masters, (213)271-6930.

San Fernando Valley TI-99/4A User Group. Meetings: 2nd Wed. 7:30 pm Doctor's Conf. Rm., Sherman Oaks Hospital, 4929 Van Nuys Blvd. Call for info: (805)379-2937. Or write: SFV 99ers, 633 Hollyburne Ln., Thousand Oaks, CA 91360.

TIPC West. Meetings: 3rd Mondays, 7 pm, 11828 Jefferson Blvd., Culver City. Call Lew Howard, (213)397-9668.

UserGroup of Orange County. Meetings: 1st Thurs., 7:30 pm, 7813 Edinger, Huntington Beach. Call (714)633-7317.

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Associations

ACCPAC Accounting SIG. Meetings: 2nd Wednesdays at 7 pm. Users, CPAs, consultants, and other business people interested in sharing information on Computer Associates' ACCPAC Accounting software. Call Donna Miller, (213)393-0244.

California Educational Computing Consortium (CCCE). For information, write Herb Garrett, Long Beach City College, 4901 E. Carson ST., Long Beach, CA 90808.

Computer Professionals for Social Responsibility. Meetings: Most third Wednesdays, 7:30 pm, UCLA. CPSR/LS focuses on computer system risk and reliability and on privacy and civil liberties issues.

Independent Computer Consultants Association (ICCA). Meetings: Monthly. Call: Los Angeles, (805)253-1973; Orange County, (714)852-6164; San Diego, (619)294-6550.

International Blind Users Group (I-BUG). Part of the National Association of Blind and Visually Impaired Computer Users. Membership consists of access to CompuHelp, a 24 hour on-line database/bulletin board system, and receiving CompuHelp On-Disk, a modem database bulletin board system on two double-sided disks. Call: (916)783-0364 or 645-8036.

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North Orange County Computer Club (NOCCC). Meetings: Monthly on Sundays, Chapman College near downtown Orange. Help for beginners, SIGs, educational activities, monthly newsletter. Open to any computer user. Call: (714)998-8080.

Realtor Microcomputer UG (RUG). Meetings: 4th Thursdays, 7 pm, Pasadena BOR, corner of Orange Grove and Los Robles, Pasadena, CA.

Thousand Oaks Personal Computer Club (TOPCC). Meetings: 4th Thursdays, 6:30 pm, California Lutheran University, Thousand Oaks. BBS: (805)371-1121.

Westside Computer Users and BBSers Group. Meetings: Last Saturdays, 6:30 pm, Flakey Jake's restaurant, 2347 S. Sepulugda Blvd. @ Pico. Call: Dave Harrison, (213) 857-5800.

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NEWS AND ANALYSIS

continued from page 29

early versions so that those companies would port their products to IBM's AIX version of UNIX, few of those companies were ready at the announcement.

To make matters worse, many of the companies only ported the character-based versions of their programs to the 6000 series, making the graphics workstations even less desirable.

•How committed is IBM to the workstation market? The week before the System/6000 announcement, IBM added a new layer to the bottom end of its 370 mainframe line. The new ES/9370 models 10, 12, and 14 are probably of much more interest to IBM than anything in the System/6000 line, because the potential buyers are already true-blue IBM fans. The ES/9370 line lets users run off-the-shelf 370 software, since the systems run the VM operating system. In addition, these systems also sport MCA slots, so that you can attach standard PC peripherals to them without having to use complicated networking.

> **The specs for the System/6000 make it clear that IBM is aiming it at the federal market, the most lucrative market for UNIX workstations. A typical example of this might be a contract that requires both RISC and a fast industry-standard bus.**

Of course, VM is not UNIX, and many potential buyers of the System/6000 would never consider buying a scaled-down mainframe with a proprietary operating system. However, they also wouldn't consider buying a system whose software base is almost as limited as the NeXT machine's and whose operating system rivaled NeXT's for being so late.

IBM is banking on the federal market and sales to established IBM shops for at least the first few years. This could be enough to keep the system afloat and to garner enough software support to bring in other users—but that's what IBM hoped for the RT.

In the end, it is clear that the System/6000 is a powerful machine at a high price. Other manufacturers have been able to get a foothold in the UNIX market with similar machines, although usually in niches that had no competition when the systems were introduced. IBM must hope that it can also find such niches (such as being the only MCA-based RISC system) to overcome its sour history in the workstation market. ■

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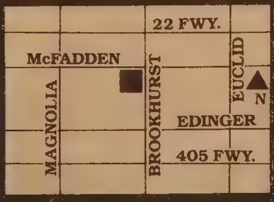

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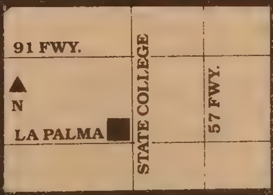

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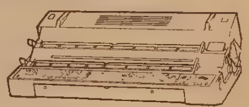

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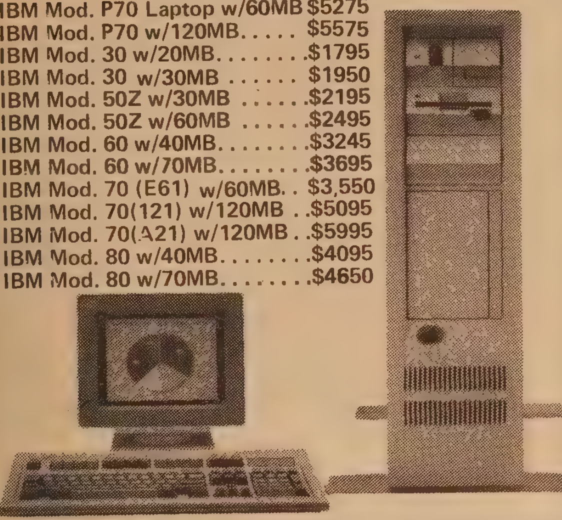

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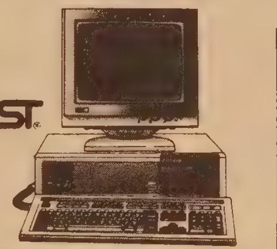

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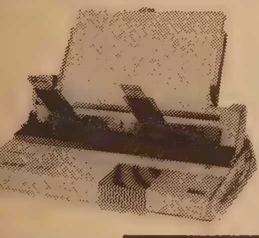

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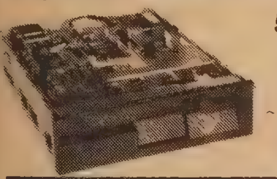

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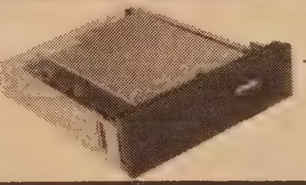

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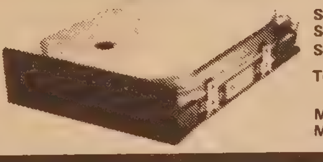

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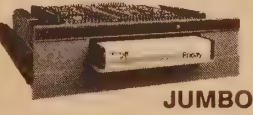

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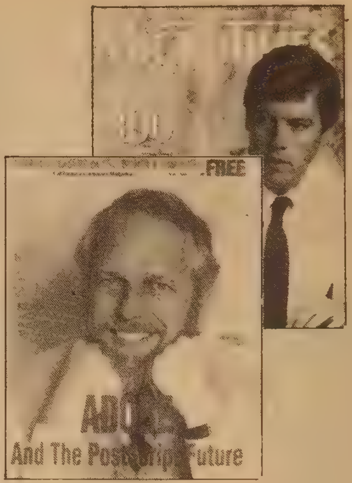

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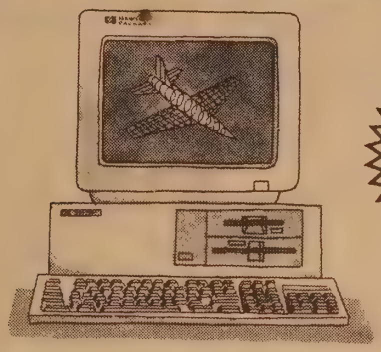

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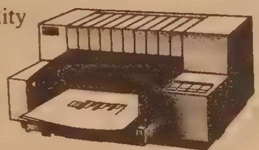

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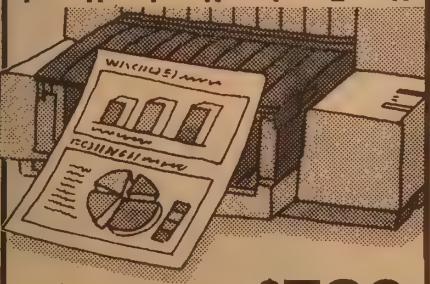

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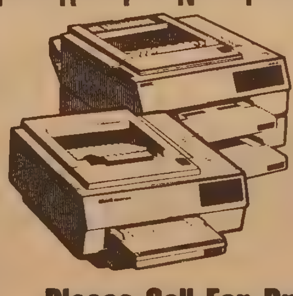

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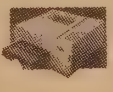

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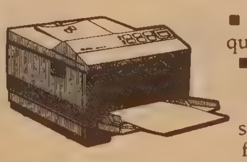

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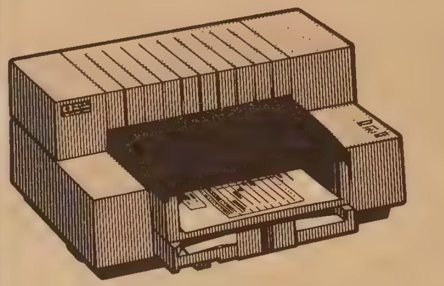

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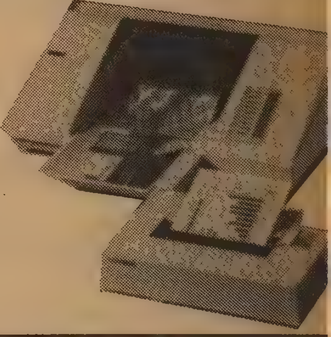

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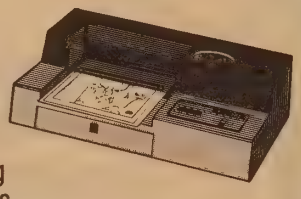

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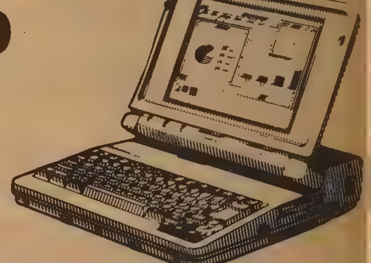

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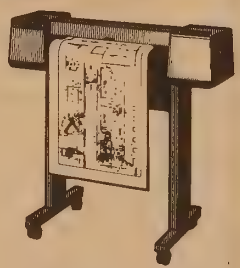

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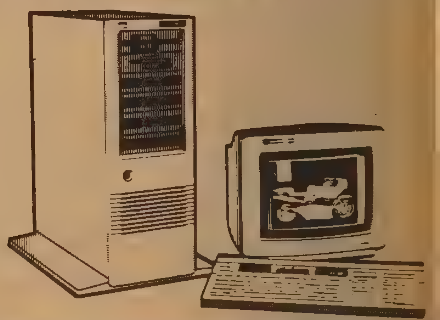

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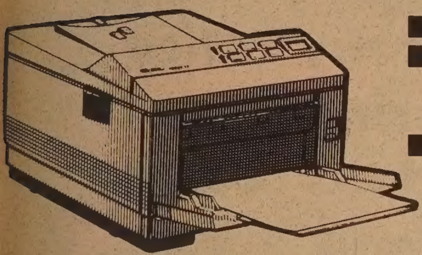

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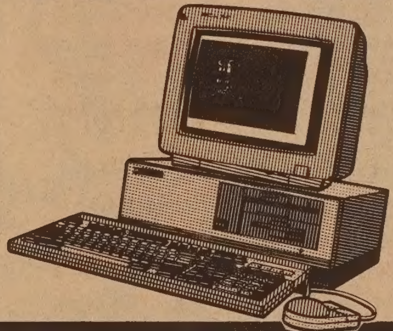

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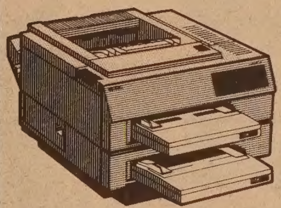

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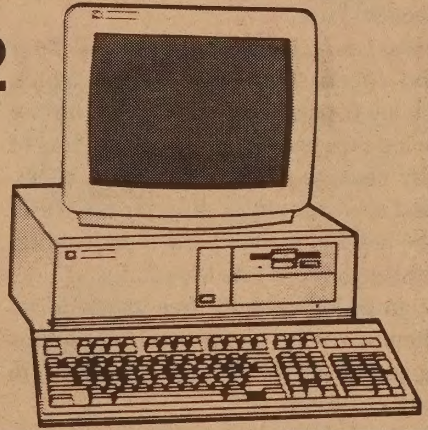

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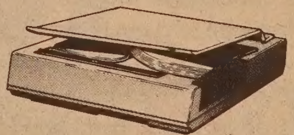

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DVORAK'S LAST COLUMN • BY JOHN C. DVORAK

Temple Of Doomed Mice & Trakballs

Or, How You Can Be A Screenwriter In Your Spare Time

It was suggested that I change my style. I should write these columns with the idea in mind that I should option them as screenplays.

"Screenplays?" I was flabbergasted, but it was Jim Fenton who told me this. He makes over $100,000 a year optioning his HERE'S JIM! gardening column.

"It's easy. You just need dramatic moments." He was dead serious as he showed me a couple of his more compelling articles. "Here! See!" He said as he held up a copy of an article entitled "Rhododendrons—Threat or Menace?!"

He says he can get anywhere from $10,000 to $30,000 per option. Obviously not all his columns get the royal treatment. "You only need to sell a few a year to make it worthwhile," he said.

The next day I roamed around my office wondering how I could do a column about bad computer ideas and turn it into a treatment for a screenplay and then option it to some sucker who just wanted the title.

I could tell the story of Larry "the Mole" Lipshitz, inventor of the DOS-Shell Co-Ordinator, a program that loaded one DOS shell in after another and coordinated their activity with a DOS Shell shell. It was determined that if you loaded every DOS shell into the DOS Shell Co-Ordinator you wouldn't have any room left to run any programs. Lipshitz claims that the OS/2 upgrade will solve this dilemma by using protected mode.

Lipshitz was best known for writing code for the Lawrence Livermore Lab Cray-2. He lost credibility when he promoted the notion that WordStar 3.3 should be used as a benchmark for all computers, including a Cray.

"You should see the Cray-2 run WordStar. It's really fast," he told me in a rare interview. Lipshitz apparently wrote an 8088 emulator in vectorizing Fortran and then managed to run a virtualized DOS and WordStar run in batch mode as a Fortran program. He actually developed this concept at the University of California where he invented a WordStar whose source code was on punched cards. In fact the editor only ran in batch mode. So all the documents had to be keypunched and edited in batch mode too. The fact that no real-time editing could be done was irrelevant to Lipshitz. "This is a benchmark!" he'd scream at detractors.

After most of these ideas failed, he went to work at Ashton- Tate and, I'm told, was fired for trying to code dBASE V in Fortran.

Lipshitz wasn't the weirdest guy I ran into recently. Let's not forget Larry Gopherhole, a professor of English Lit at Cal Berkeley. Struck by lightning in 1985, he became a computer fanatic and someone who dedicated his life to one pursuit: making the computer accessible and beloved by the post mid-life-crisis male.

He went from PC manufacturer to PC manufacturer promoting the idea of a laptop computer for middle-aged men. It was said to be the only portable with a bald spot.

Gopherhole was eventually captured and returned to lock-up therapy where he stayed for a couple of years. He now lives in Sausalito where he runs a semi-profitable floppy disk refurbishing business and diskette buffing service. Most observers figure that his nearby massage parlor makes all the real money.

Meanwhile, I can't forget the authors of the weird and unusual books. There's Brad B. Bradman's *Error Codes Almanac—1990*. It's sold 40 copies over the past two years, most of them purchased by Brad's Mom, Dorothy, who uses them to drop from the second story window on Sunday mornings when the Jehovah's Witnesses come around. Brad's claim to fame is a unique ability to belch the Greek alphabet at parties.

Then there's Art C. Craftsy and his book, *Upgrading a Kaypro*. Craftsy felt he was on his way to his first million when he opened the closet door of his bedroom to be conked on the head and killed by a stray Kaypro portable. The publisher took the book off the market immediately after Craftsy's death. It mysteriously reappeared under a new author's name a few months later.

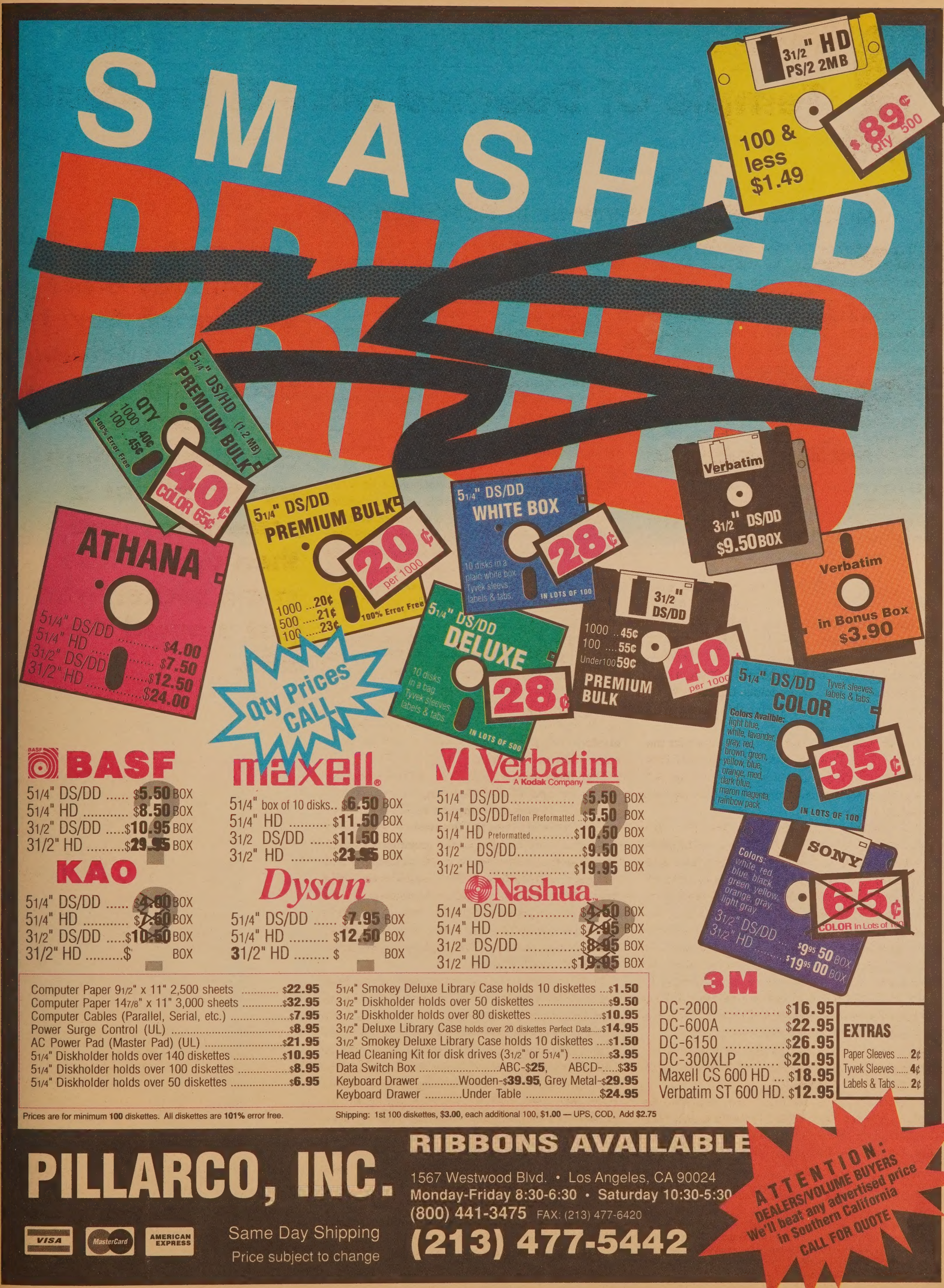
Then there was Les B. Trendy and his book, *Your Computer and Global Warming*, a book which managed to blame the computer revolution for the melting of the ice caps and the eventual flooding of New York City because of the greenhouse effect. Trendy was last seen wearing a duck costume and strapped to the hood of a 1945 Ford Woody while being driven through the White Mountains of New England by a group of Vermont free-love nudists who pride themselves on never wearing clothes while driving and never having to pay a toll at the Sumner Tunnel in Boston.

I can't really finish this column without mentioning John Handcreme and his idea for a line of commemorative mouse balls. His business plan targeted the Franklin Mint as the likely marketeer of such a concept, and he was about to sign a venture capital agreement with Kleiner Perkins to design prototype balls when, while dining at a famous (and notorious) San Francisco gourmet restaurant, he choked on a chicken bone and died when a professional wrestler gave him a Heimlich maneuver and crushed his chest. The ownership of the mouse ball business plan and Handcreme's ideas are now being litigated in Federal Court.

These are all things that great screenplays are made from, don't you think? We won't even begin to discuss the keyboard-on-a-stick or the pig latin voice recognition software. Hollywood isn't ready for that yet. ■

I roamed around my office wondering how I could do a column about bad computer ideas and turn it into a treatment for a screenplay and then option it to some sucker who just wanted the title.

Copyright © 1990 by John C. Dvorak. All rights reserved. John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine *and* MacUser*, considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.*



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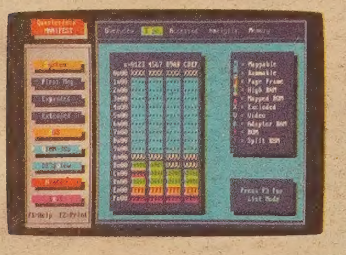

Manifest shows you things you might not otherwise know about your PC.

Manifest gives you a guided tour 'under the hood' of your PC, to show what's going on, what type and amount of memory is available, and even which portions of RAM are faster.

INFO WORLD
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Dec. 18, 1989

Then it suggests how you might load networks, buffers, TSRs, mouse drivers, and other utilities into unused memory.

It finds and displays all the contents of your AUTOEXEC.BAT and CONFIG.SYS files, which can be a big help in diagnosing problems.

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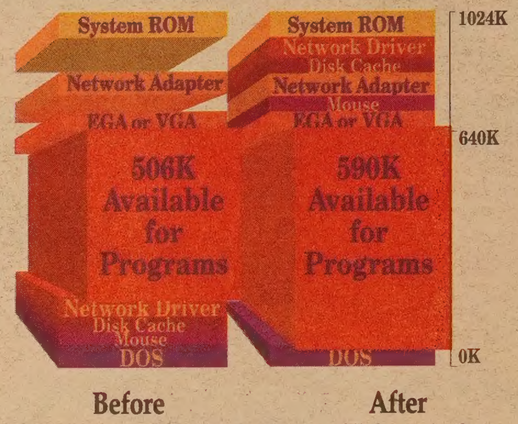

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And if you have an EGA or VGA-equipped PC and don't need graphics at the moment, QRAM will make an additional 96K of memory available! When you need graphics again, QRAM will switch you back to graphics mode! Think how helpful that will be for those big dBASE files.

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QEMM-386: 80386-based PCs and PS/2s and PCs with 80386 add-in boards.

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Pasadena 818-351-4273

Software Supermarket
Hawthorne 213-542-3801
Los Angeles 213-477-5122
Sherman Oaks 818-783-3233

Dustin Discount Software
Woodland Hills 818-710-9174

Super Computer Center
Torrance 213-542-8977
Santa Ana 714-754-1166
Fullerton 714-680-6550

Microage
Anaheim 714-530-3266

Soft Warehouse
Fountain Valley 714-965-0580
Torrance 213-540-0593

Simi Valley Software
Canoga Park 818-705-1895

And all Egghead Discount Software, Software City, ComputerLand and Businessland stores throughout Southern California